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JOURNAL

OF THE

AMERICAN GEOGRAPHICAL SOCIETY

OF

NEW YORK

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AMERICAN GEOGRAPHICAL SOCIETY.

OFFICERS AND COUNCILLORS, 1885.

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CHARTER OF INCORPORATION.

GRANTED APRIL 13, 1854.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. George Bancroft, Henry Grinnell, Francis L. Hawks, John C. Zimmerman, Archibald Russell, Joshua Leavitt, William C. H. Waddell, Ridley Watts, S. De Witt Bloodgood, M. Dudley Bean, Hiram Barney, Alexander J. Cotheal, Luther B. Wyman, John Jay, J. Calvin Smith, Henry V. Poor, Cambridge Livingston, Edmund Blunt, Alexander W. Bradford, and their associates, who are now or may become hereafter associated for the purposes of this act, are hereby constituted a body corporate by the name of "The American Geographical and Statistical Society," for the purpose of collecting and diffusing geographical and statistical information.

§ 2. For the purposes aforesaid, the said Society shall possess the general powers and privileges, and be subject to the general liabilities, contained in the third title of the eighteenth chapter of the first part of the Revised Statutes, so far as the same may be applicable, and may not have been modified or repealed; but the real and personal estate which the said Society shall be authorized to take, hold, and convey, over and above its library, and maps, charts, instruments, and collections, shall not at any time exceed an amount the clear yearly income of which shall be ten thousand dollars.

§ 3. The officers of said Society shall be a president, three vice-presidents, a corresponding secretary, a recording secretary, a librarian, and a treasurer and such other officers as may from time to time be provided for by the by-laws of the said Society.

§ 4. The said Society, for fixing the terms of admission of its members, for the government of the same, for changing and altering

the officers above named, and for the general regulation and management of its transactions and affairs, shall have power to form a code of by-laws, not inconsistent with the laws of this State, or of the United States, which code, when formed and adopted at a regular meeting, shall, until modified or rescinded, be equally binding as this act upon the said Society, its officers, and its members.

5. The Legislature may, at any time, alter or repeal this act.
6. This act to take effect immediately.

STATE OF NEW YORK, } *ss.:*
Secretary's Office, }

I have compared the preceding with the original law on file in this office, and hereby certify the same to be a correct transcript therefrom, and of the whole of said original law.

Given under my hand and seal of office, at the city of Albany, this
[L. S.] thirteenth day of April, one thousand eight hundred and fifty-four.

A. G. JOHNSON,
Deputy Secretary of State.

AMENDED CHARTER.

PASSED APRIL 8, 1871.

STATE OF NEW YORK, NO. 237, IN SENATE. *March* 7, 1871.—Introduced with unanimous consent, by Mr. Bradley; read twice, and referred to the Committee on Literature; reported favorably from said committee, and committed to the Committee of the Whole.

CHAP. 373.

AN ACT in relation to The American Geographical and Statistical Society.

PASSED April 8, 1871.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. The name or corporate title of the said Society shall hereafter be The American Geographical Society of New York.

§ 2. The object of the said Society shall be the advancement of geographical science; the collection, classification and scientific arrangement of statistics, and their results; the encouragement of explorations for the more thorough knowledge of all parts of the North American continent, and of other parts of the world which may be imperfectly known; the collection and diffusion of geographical, statistical and scientific knowledge, by lectures, printed publications, or other means; the keeping up of a correspondence with scientific and learned societies in every part of the world, for the collection and diffusion of information, and the interchange of books, charts, maps, public reports, documents, and valuable publica-

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tions; the permanent establishment in the city of New York of an institution in which shall be collected, classified, and arranged, geographical and scientific works, voyages, and travels, maps, charts, globes, instruments, documents, manuscripts, prints, engravings, or whatever else may be useful or necessary for supplying full, accurate, and reliable information in respect to every part of the globe, or explanatory of its geography, physical and descriptive; and its geological history, giving its climatology, its productions, animal, vegetable, and mineral; its exploration, navigation, and commerce; having especial reference to that kind of information which should be collected, preserved, and be at all times accessible for public uses in a great maritime and commercial city.

§ 3. The power given by the act hereby accorded to the said Society, to take, hold, convey, manage, and make use of its real and personal estate, shall be understood as authorizing said Society to take and hold by gift, grant, bequest, devise, subject to all provisions of law relative to devises and bequests by last will and testament, or purchase real estate to the value of three hundred thousand dollars, and to invest its income, or its personal estate generally, so as to produce a regular annual income sufficient for the accomplishment of the purposes set forth in the first section of this act; but said annual income shall not exceed twenty-five thousand dollars annually.

§ 4. The said Society shall make an annual report of its proceedings to the Legislature.

STATE OF NEW YORK, } *ss.:*
Office of Secretary of State, }

I have compared the preceding with the original law on file in this office, and do hereby certify that the same is a correct transcript therefrom, and of the whole of said original law.

Given under my hand and seal of office, at the city of Albany, this twenty-second day of May, in the year one thousand eight hundred and seventy-one.

[L. S.]

DIEDRICH WILLERS, JR.,
Deputy Secretary of State.

BY-LAWS.

CHAPTER I.

TITLE.

The title of the Society is, "The American Geographical Society."

CHAPTER II.

OBJECTS.

The objects of the Society are, "The collecting and diffusing of geographical and statistical information."

CHAPTER III.

MEMBERS.

1. The Society shall consist of Fellows, Honorary, Corresponding, and *ex-officio* members.

2. Honorary members shall be chosen on account of their distinction in the science of geography or statistics, and not more than twelve of them shall hereafter be elected in any one year.

3. Corresponding members shall be chosen from those who have aided the advancement of geography or statistics.

4. *Ex-officio* members shall be foreign diplomatic representatives and consuls resident in the United States; and United States diplomatic representatives and consuls in foreign countries.

4. Fellows and Corresponding and Honorary members shall be elected as follows: All nominations of candidates shall be openly made in writing at a meeting of the Society, or the Council, by a member thereof, and, together with the name of the member making them, entered on the minutes. The persons thus nominated, when

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approved by the Council and elected by the Society, shall, on payment of the initiation fee, if nominated as Fellows, and without such payment if nominated as Corresponding or Honorary members, become members of the Society accordingly.

6. Persons entitled to become *ex-officio* members of the Society shall, on the recommendation of the Council, be, by the Society, constituted and declared to be such members.

7. The name of any member of the Society may, on the recommendation of the Council, and by a vote of two thirds of the members present at a stated meeting of the Society, be dropped from the roll of its members.

CHAPTER IV.

INITIATION FEE AND ANNUAL DUES.

1. The initiation fee, including the dues for the current year, shall be, for a Fellow, ten dollars, to be paid immediately on election.

2. The annual dues thereafter shall be, for a Fellow, ten dollars, to be paid in advance.

3. Any Fellow of the Society, not in arrears, may commute for life all dues for fellowship by the payment at one time, if a Fellow, of one hundred dollars.

4. The name of any Fellow of the Society neglecting for two successive years to pay his annual dues, or at any time wholly refusing to pay them, may by the Council be erased from the list of Fellows of the Society.

5. The fiscal year of the Society shall, for all purposes, be the calendar year—that is, commence on the first day of January, and end with the 31st day of December in each year.

CHAPTER V.

OFFICERS.

1. The officers of the Society shall be a president, three vice-presidents, a foreign corresponding secretary, a domestic corresponding secretary, a recording secretary, a treasurer, and fifteen councillors; and these, together, shall form the Council of the Society.

2. The officers and members of Council elected at the next

annual election (except the president and treasurer) shall, at their first meeting, divide themselves into three classes, each to embrace one vice-president, one secretary, and five members of the Council; one of which classes shall hold office one year, one for two years, and another for three years, to be determined at said meeting by lot or otherwise. The president and treasurer shall always be elected annually; and at each annual election thereafter there shall be elected a vice-president, a secretary, and five members of Council, each for the term of three years.

3. All officers of the Society to be chosen at any election may be voted for on one ballot.

CHAPTER VI.

ANNUAL MEETING.

1. The annual meeting of the Society shall be held on the second Tuesday after the first day of January in each and every year hereafter, when the annual election of the officers of the Society shall take place; and if, from any cause, there shall be a failure of the annual election at the time above designated for that purpose, the same may be held on the Tuesday next following—that is, on the third Tuesday after the first day of January in each year—and of which due notice shall be given.

2. Every member of the Society, who has been such for twenty days or more, and who is not in arrears for his dues for the past year, shall be entitled to vote at the said election.

3. At the annual meeting of the Society the Council shall present a general report of its proceedings and of those of the Society during the past year, and the secretaries and the treasurer shall also present their annual reports.

CHAPTER VII.

MONTHLY AND SPECIAL MEETINGS.

1. The Society, unless otherwise specially ordered by the Society or the Council, shall hold its stated meetings for the transaction of business on the second Tuesday of each month of the year, except July, August, and September.

2. The president, or, in his absence, one of the vice-presidents, may, and upon the written request of five members, shall, call a

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special meeting of the Society by giving three days' notice thereof in two daily newspapers published in the city of New York.

CHAPTER VIII.

ORDER OF BUSINESS.

1. At all stated meetings of the Society for the transaction of ordinary business the order of proceedings shall be as follows :

1. Reading of the Minutes.
2. Reports and Communications from Officers of the Society.
3. Reports from the Council.
4. Reports from Committees.
5. Nominations of Members.
6. Special Orders.
7. Unfinished Business.
8. Miscellaneous Business.
9. Papers Read and Addresses Delivered before the Society.

2. All propositions presented for the action of the Society at any of its meetings shall be in writing, when requested by the presiding officer or any member. A proposition thus presented, when seconded and the question thereon stated from the chair, shall be deemed to be in the possession of the Society and open for discussion, but may be withdrawn by the mover at any time before amendment or decision.

3. No member shall speak more than once upon the same question until all the other members present desiring to speak shall have spoken, nor more than twice on any question without leave of the Society.

CHAPTER IX.

QUORUM.

At all meetings of the Society nine members present shall constitute a quorum for the transaction of business.

CHAPTER X.

COMMITTEES.

All committees authorized by the Society shall, unless otherwise specially ordered, consist of three members each, and be appointed by the presiding officer.

CHAPTER XI.

PRESIDING OFFICER.

At all meetings of the Society, on the arrival of the appointed hour and the presence of a quorum, the president, or in his absence one of the vice-presidents, or in the absence of both a chairman *pro tem.*, shall immediately take the chair, call the meeting to order, and preside. He shall have only a casting vote. He shall preserve order and decide all questions of order, subject to an appeal to the Society. He shall also, unless otherwise specially ordered, appoint all committees authorized by the Society ; and at every annual election, before the opening of the polls, he shall appoint two tellers of the election.

CHAPTER XII.

SECRETARIES.

1. Foreign Corresponding Secretary.—It shall be the duty of the foreign corresponding secretary to conduct the general correspondence of the Society with individuals and associate bodies in foreign countries.

2. Domestic Corresponding Secretary.—It shall be the duty of the domestic corresponding secretary to conduct the Society's general correspondence with individuals and associate bodies in the United States.

3. Both the foreign and domestic secretaries shall keep in suitable books to be provided for that purpose, at the Society's rooms, true copies of all letters written by them respectively on behalf of the Society ; and shall preserve, on proper files, at the said rooms, all letters received by them on the same account ; and at each stated meeting of the Society or the Council, they shall respectively report their correspondence, and read the same, or such parts thereof as may be required.

4. In case of vacancy in the office of either of the corresponding secretaries, or in the absence or disability of either of these officers, the duties of both may be performed by the other corresponding secretary.

5. The Society may designate a particular officer, or appoint a committee to prepare a letter or letters on any special occasion.

6. Recording Secretary.—It shall be the duty of the recording

secretary to give due notice of the time and place of all meetings of the Society, and to attend the same. He shall keep fair and accurate minutes of the proceedings of the Society, and record the same, when approved, in the Society's Journal. He shall give immediate notice to the several officers and committees of the Society, of all votes, orders, resolves, and proceedings of the Society affecting them or appertaining to their respective duties. He shall prepare a list of the members of the Society entitled to vote, to be handed to the tellers before the opening of the polls at each annual election. He shall officially sign and affix the corporate seal of the Society to all diplomas and other instruments or documents authorized by the Society or Council. He shall have charge of the corporate seal, charter, by-laws, records, and general archives of the Society, except so far as they may be expressly placed under the charge of others. He shall certify all acts and proceedings of the Society, and shall notify the Council of the death, resignation, or removal of any officer or member of the Society. He shall have charge of the rooms of the Society, and shall perform all such other and further duties as may from time to time be devolved upon him by the Society or the Council. He, together with the Council, shall have the charge and arrangement of the books, maps, and collections belonging to the Society. He shall cause to be kept in the rooms of the Society a registry of all donations to the library or collections of the Society, acknowledge their receipt by letter to the donors, and report the same in writing to the Society at its next stated meeting.

7. All documents relating to the Society and under the charge of the secretaries respectively, shall be placed in such depositories in the rooms of the Society as the Council may provide and designate for that purpose.

CHAPTER XIII.

TREASURER.

The Treasurer shall have charge of and safely keep all contracts, certificates of stock, securities, and muniments of title belonging to the Society. He shall collect the dues and keep the funds of the Society, and disburse the same under the direction of the Council; and so often as the said funds in the hands of the treasurer shall amount to one hundred dollars, he shall deposit the same, in the

name of the Society, in some incorporated bank in the city of New York, to be designated for that purpose by the Council; and the said funds, thus deposited, shall be drawn out of the said bank on the check of the treasurer, countersigned by the chairman of the Council, and only for the legitimate and authorized purposes of the Society. The treasurer shall, previous to the annual meeting of the Society, prepare and submit to the Council for audit, a detailed account of his receipts and disbursements for account of the Society during the past year; and which annual account, duly audited, he shall present, with his general report, to the Society at its annual meeting.

CHAPTER XIV.

COUNCIL.

1. The Council shall have the management and control of the affairs, property, and funds of the Society, and shall designate an incorporated bank in the city of New York, where the said funds shall, from time to time as they accrue, be deposited by the treasurer.

2. It may frame its own by-laws, not inconsistent with the charter or by-laws of the Society.

3. It shall appoint the necessary agents, clerks, and servants of the Society, with such powers and duties, privileges and compensation as it may from time to time determine; and may at pleasure revoke such appointments, and make others in their stead.

4. It shall have power to fill, for the unexpired term, any vacancy that may occur in any of the offices of the Society.

5. It shall have power, at its discretion, to declare vacant the seat of any member of its own body (except the president and vice-presidents) who shall have been absent from its meetings for three successive months; and also by a vote of a majority of the whole Council to remove from its own body any member thereof for cause; but in such case it shall be the duty of the Council to report every such vacancy or removal to the Society, at its next stated meeting thereafter, when such cases shall be subject to review by the Society.

6. It shall not, without an approving vote of the Society at a stated meeting thereof, make any contract whereby a liability in amount above one thousand dollars may be incurred by the Society; nor

without such vote make any sale or disposition of the property of the Society exceeding that sum in value.

7. The Council may, in its discretion, remit the initiation fee or annual dues of any member of the Society.

8. No member of the Council shall receive any salary or pecuniary compensation for his services.

9. The Council shall hold stated meetings for the transaction of business at least once in every month, except the months of July, August, and September.

10. At all meetings of the Council, five members present shall constitute a quorum for the transaction of business.

CHAPTER XV.

GENERAL PROVISION AS TO DEBT.

No debt on account of the Society, beyond the funds in the treasury for its payment, shall for any purpose, at any time, be incurred; and if at any time it shall appear that there are resting upon the Society pecuniary obligations beyond the funds in the treasury for their liquidation, no appropriation of funds from the treasury whatever, except for the necessary current expenses of the Society, shall be made, until the said pecuniary obligation shall be fully discharged, or the funds necessary for their extinction shall have been set apart for that purpose.

CHAPTER XVI.

ALTERATION OF THE BY-LAWS.

No alteration in the by-laws of the Society shall be made unless openly proposed at a stated meeting of the Society, entered on the minutes, with the name of the member proposing the same, and adopted by the Society at a subsequent meeting, by a vote of two thirds of the members present.

CHAPTER XVII.

ADOPTION OF THE BY-LAWS.

The foregoing are hereby adopted and declared to be the by-laws of the Society; and all by-laws of the Society heretofore adopted are hereby rescinded and declared to be null and void.

HONORARY AND CORRESPONDING MEMBERS AND FELLOWS.

HONORARY MEMBERS.

BAKER, Sir Samuel W., F.R.S., F.R.G.S.

CONSTANTINE, the Grand Duke, President of the Imperial Russian Geographical Society, St. Petersburg.

DUFFERIN, the Earl of, Viceroy and Gov.-General of India.

ELDER, Sir Thomas, Adelaide, South Australia.

ISMAÏL, ex-Khedive of Egypt.

LAYARD, Sir Austen Henry, D.C.L.

MARKHAM, Clements R., K.C.B., Secretary of the Royal Geographical Society.

MIDDENDORFF, Adolph Theodore von, Secretary of the Imperial Academy of Sciences, St. Petersburg.

NARES, Sir George S., R.N., K.C.B.

NORDENSKIÖLD, Professor A. E., Stockholm.

PEDRO II., Emperor of Brazil.

RAWLINSON, Major-General Sir Henry C., K.C.B., Vice-President of the Royal Geographical Society.

STRUVE, Professor Otto Wilhelm von, St. Petersburg.

WILCZEK, Count H., Vienna.

CORRESPONDING MEMBERS.

ABBE, Prof. Cleveland, Washington.

ALTAMIRANO, Ignacio, Mexico.

AMMEN, Rear-Admiral Daniel, U.S.N., Washington.

ARSENIEW, George, St. Petersburg.

ASBJÖRNSEN, P. C., Christiania, Norway.

BALFOUR, David M., Boston, Mass.

BARANDA, Joaquin, Mexico.

BARCLAY, James T., M.D., Jerusalem.

BARNARD, Henry, LL.D., Hartford, Conn.

BARTLETT, John Russell, Providence, R. I.

BASAROFF, Ed. Ivan de, Stuttgart.

BASTIAN, Dr. Adolph, Berlin.

BECKER, Prof. M. A., Vienna.

BLACKIE, Walter G., Ph.D., F.R.G.S., Glasgow.

BOM RETIRO, Viscount, President of the Instituto Historico Geographico, Rio de Janeiro.

BOTASSI, Demetrius, Consul-General of Greece, New York.

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BRAINE, Capt. D. L., U.S.N., Washington.
BREWER, Prof. Wm. H., New Haven, Conn.
BRIGHT, John, M.P., London.
BROWNLEE, Harrison J., C.E., Manitoba.
BUSHNELL, Rev. Albert, Gaboon, Africa.
CHAIX, Prof. Paul, Geneva, Switzerland.
CHANDLES, W., F.R.G.S., London.
DANENHOWER, Lieut. J. W., U.S.N., Newport, R. I.
DO CANTO, Dr. Ernesto, St. Michael's, Azores.
DRAPER, Lyman, Madison, Wis.
FOULKE, Ensign G. C., Washington.
FRITSCH, Hugo O., New York.
GARDNER, Prof. James T., Albany.
GILLIODTS-VAN SEVEREN, L., LL.D., Bruges.
GILMAN, Daniel C., LL.D., President Johns Hopkins University, Baltimore.
HAGUE, J. D., New York.
HALDERMAN, John A., U. S. Minister to Siam.
HANCOCK, Prof. W. N., LL.D., Dublin.
HAYDEN, Prof. F. V., Washington.
HEATH, Dr. E. R., Wyandotte, Kansas.
HITCHCOCK, Prof. C. H., Ph.D., Hanover, N. H.
HOCHSTETTER, Dr. Ferdinand von, Vienna.
HOSMER, Dr. George, New York.
HOTCHKISS, Maj. Fred., Staunton, Va.
HOUGH, Franklin B., M.D., Washington
HUNT, Prof. T. Sterry, LL.D., Boston.
ISMAÏL Pacha, Governor-General of the Soudan.
JACKSON, John P., Berlin.
JOHNSTON, W. E., M.D., Paris.
LACROZE, Julius, C.E., Buenos-Ayres.
LAMANSKY, Eugene von, St. Petersburg.
LEFROY, Gen. Sir John Henry, B.A., London.
LESSEPS, Ferdinand de, Paris.
LONG, Col. C. Chaillé.
LUCE, Capt. S. B., U. S. N., Newport, R. I.
MALTE-BRUN, V. A., Hon. Sec'y of the Société de Géographie, Paris.
MARISCAL, Ignacio, Mexico.
MARTIN, Rev. W. A. P., President of the Imperial College, Pekin.
MATHEWS, F. A., U. S. Consul-General, Tangier, Morocco.
MAUNOIR, Charles, Paris.
MAURY, Louis Ferdinand Alfred, Paris.
MCCARTEE, D. Bethune, M.D., Summit, N. J.
MELLO, Dr. T. G. M., Rio de Janeiro.
MORGAN, Henry Jas., Ottawa, Canada.
NAPRSTEK, V., Prague, Bohemia.
NASSAU, Rev. R. H., Gaboon, Africa.
NEGRI, Cristoforo, Turin.
NEWMARCH, William, Hon. Sec'y of Statistical Society, London.
ORTIZ, Angel D., Seville.
PACKARD, Prof., A. S., Jr., Providence, R. I.
PASSMORE, Frank B., C.E., New Zealand.
PERALTA, Manuel M. de, London.
PIM, Capt. Bedford, London.
POESCHE, Theodore, Washington.
PORTO SEGURO, Viscount, Envoy of Brazil at Vienna.
PUMPELLY, Prof. R., Newport, R. I.
RAE, John, M.D., London.
RAIMONDI, Antonio, Lima, Peru.
RAYMOND, Major Chas. W., U.S.A.
ROHLFS, Gerhard, M.D.
ROMERO, Matias, Envoy of Mexico at Washington.
ROTHROCK, J. T., M.D., Wilkesbarre, Pa.
SAPUCAHY, Viscount, Rio de Janeiro.

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SCHLAGINTWEIT-SAKÜNLÜNSKI, Robert von, Giessen, Germany.
SCHUMACHER, Hermann A., M.D., Consul-General of Germany, New York.
SCHUMACHER, John, Altona, Germany.
SCHUYLER, Eugene, U. S. Minister to Roumania and Servia.
SELFRIDGE, Comm. T. O., U.S.N., Washington.
SEYMOUR, Horatio, LL.D., Utica, N.Y.
STANLEY, Henry M., Africa.
STARRING, Gen. F. A., Paris.
STEERE, J. B., Hongkong.
STEVENS, Henry, LL.D., London.
STONE, Gen. Chas. P., Cairo.
TILLEY, Sir S., Ottawa, Canada.
VAN CAMPEN, Sam'l Richard, F.R.G.S., C.M.G.S.N., London.
VINCENT, Frank, Jr.
VIVIEN DE ST.-MARTIN, Versailles.
WALKER, Gen. Francis A., New Haven, Conn.
WALLING, H. F., C.E., Washington.
WHEELER, Capt. Geo. M., U.S.A., Washington.
WRIGHT, Gen. Horatio G., U.S.A., Washington.
WYSE, Lieut.-Comm. Lucien N. B., Paris.
YOUNG, Jess., F.R.G.S., Wisbeach, England.

FELLOWS.

CORRECTED TO DECEMBER 31, 1885.

Date of Election.	
1859	Arnoux, William H.
1859	Arnold, David H. (L. F.)
1860	Acton, Thomas C.
1869	Auchmuty, Richard Tylden.
1871	Atterbury, Rev. Wm. W., D.D.
1872	Allen, Horatio M.
1873	Albert, Halpern.
1874	Alexander, Junius B.
1874	Arthur, Gen. Chester A.
1874	Aufermann, August.
1874	Acker, David D.
1874	Avery, Samuel P.
1874	Agnew, John T. (L. F.)
1874	Arnold, Richard.
1874	Allen, Henry Wilder.
1874	Amy, Henry.
1874	Agnew, Alexander McL.
1874	Astor, W. W. (L. F.)
1874	Appleton, D. S.
1874	Anderson, Henry H.
1875	Amsinck, Gustav.
1876	Appleton, Nathan.
1878	Austin, Chas. P.
1879	Austin, William.
1879	Agostini, Joseph.
1879	Agnew, Cornelius R., M.D.
1879	Ashley, Lucien S.
1879	Astor, John Jacob. (L. F.)
1880	Anthony, James L.
1881	Andrews, John R.
1881	Abbett, Leon.
1881	Allen, Eben S.
1881	Armour, Herman O. (L. F.)
1881	Andrews, Henry C.
1883	Ames, Adelbert.
1883	Aub, Albert.
1883	Atterbury, J. T.
1883	Adams, Coe.
1883	Aikman, Walter M.
1883	Adams, William.
1884	Abbott, Frank, M.D.
1884	Adler, J., M.D.

1885 Agnew, Andrew G.
1885 Adams, C. H.
1885 Auchincloss, E. S.

1852 Bancroft, George. (L. F.)
1852 Barney, Hiram. (L. F.)
1853 Brown, James M.
1856 Baker, Francis. (L. F.)
1856 Brevoort, J. Carson.
1859 Brown, James. (L. F.)
1859 Boorman, J. Marcus. (L. F.)
1859 Bernheimer, Isaac.
1859 Belmont, August. (L. F.)
1859 Barlow, S. L. M.
1861 Butterfield, Gen. Daniel.
1865 Banvard, John. (L. F.)
1868 Banks, David.
1868 Beckwith, N. M.
1868 Bennett, James Gordon.
1868 Bernheimer, Adolph.
1868 Bernheimer, Simon.
1868 Brady, John R.
1869 Bailey, Jas. Mühlenberg. (L. F.)
1869 Banyer, Goldsboro.
1869 Bickmore, Prof. A. S.
1869 Bierstadt, Albert.
1870 Butler, Cyrus.
1870 Botta, Prof. Vincenzo.
1870 Body, John E.
1870 Bishop, T. Alston. (L. F.)
1872 Brown, Walston H.
1873 Bailey, N. P.
1874 Bishop, D. W. (L. F.)
1874 Bien, Julius.
1874 Bartlett, Willard.
1874 Bissinger, Philip.
1874 Backus, Henry C.
1874 Baldwin, Townsend B.
1874 Barnes, John S.
1874 Bonner, Robert.
1874 Bonn, William B.
1874 Barnard, Horace.
1874 Benjamin, John.
1874 Butler, William Allen.
1874 Bartow, Morey H.
1874 Barr, William.
1874 Belding, Milo M.
1874 Buckley, Rev. Jas. M.
1874 Bookstaver, Henry W.
1874 Brownson, Lieut. W. H., U.S.N.
1875 Barney, Charles T.
1875 Beaman, Charles C., Jr.
1875 Bernheimer, J. A.
1875 Beckwith, Leonard F.
1875 Beekman, Gerard.
1875 Brownell, Silas B.
1875 Brown, Vernon H.
1875 Barnes, William.
1875 Beste, Henry.
1875 Bredt, Ernest.
1875 Bedle, Joseph D.
1875 Belknap, Capt. Geo. E., U.S.N.
1875 Bowie, Augustus J., Jr.
1876 Baldwin, Rear-Admiral Charles H., U.S.N.
1876 Brower, John.
1876 Billings, Frederick.
1876 Bellew, F. H. T.
1877 Booth, George.
1877 Bixby, Robert F.
1877 Börs, Christian.
1877 Blanchard, George R.
1877 Blatchford, Eliphalet W.
1878 Bliss, Cornelius N.
1878 Brown, G. Melville.
1878 Barton, Oliver Grant. (L. F.)
1878 Brown, Rev. Philip A. H.
1878 Brand, James.
1878 Brown, J. Romaine.
1879 Brady, James T.
1879 Barattoni, C. A.
1880 Bayard, Edward, M.D.
1880 Beach, Miles.
1880 Bamberger, A. E.
1880 Banks, D. S.
1881 Baldwin, Edwin.
1881 Babcock, Courtland G.
1881 Barber, Charles G.
1881 Baldwin, Christopher C.
1881 Babcock, Samuel D.

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1881 Backus, Henry Landon.
1882 Bamberger, Jacob F.
1882 Belton, Frank S.
1882 Brown, George H.
1882 Baldwin, Octavius D.
1882 Ballin, Gustave N.
1882 Bacon, Francis M.
1882 Babcock, George H.
1882 Barger, Samuel F.
1882 Barney, Newcomb C.
1882 Bowen, Francis C.
1882 Barclay, J. Searle.
1883 Brown, Francis C.
1883 Brewster, Benj. (L. F.)
1883 Barber, Herbert.
1883 Bachem, C. H.
1883 Baker, Cyrus O.
1883 Beekman, Wm. B.
1883 Berry, Oliver F.
1883 Bowne, Walter.
1883 Banta, Theodore M.
1883 Bangs, Charles W.
1883 Barr, Edward.
1883 Bergen, Tunis G.
1883 Battell, Robbins.
1883 Bennett, Ludovic.
1883 Benedict, Robert D.
1883 Blake, Frederick D.
1883 Bell, Capt. W. R.
1883 Blackford, Eugene G.
1883 Benson, Frank Sherman.
1884 Bentley, Henry. (L. F.)
1884 Baxter, Archibald.
1884 Boynton, Nathaniel A.
1884 Burrall, F. A., M.D.
1884 Barton, Geo. De F.
1884 Bangs, Fletcher H.
1884 Barnes, Theodore M.
1884 Beach, John H.
1884 Bonner, G. T.
1884 Bates, David H.
1884 Brookfield, William.
1884 Bassett, E. D.
1885 Brown, Horatio S.
1885 Bull, Wm. Lanman.
1885 Barkley, Wallace D.
1885 Bowland, George.
1885 Barnard, Frank F.
1885 Bliss, George T.
1885 Burnet, Robt. W.

1852 Colton, Joseph H. (L. F.)
1855 Conkling, Frederick A. (L. F.).
1856 Cooper, Edward.
1856 Crooks, Ramsay. (L. F.)
1868 Catlin, N. W. Stuyvesant. (L. F.)
1868 Chapman, Joseph H.
1869 Cullum, Gen. George W., U.S. Army. (L. F.)
1870 Conklin, William A.
1872 Conklin, Eugene E.
1872 Crawford, Gen. S. W., U.S.A.
1872 Clark, E. V.
1872 Cox, Samuel S.
1873 Coster, Charles H.
1874 Cruickshank, James, LL.D.
1874 Connery, T. B.
1874 Campbell, Allan.
1874 Church, Col. George E.
1874 Christern, F. W.
1874 Cockcroft, Jacob H. V.
1874 Chickering, Charles F.
1874 Comstock, Cornelius
1874 Constable, James M.
1874 Ceballos, J. M.
1874 Carter, Walter S.
1874 Caswell, Wm. H.
1874 Crerar, John.
1874 Crocker, David.
1874 Crosby, J. Schuyler.
1874 Cochrane, Capt. Henry Clay, U.S.M.C.
1874 Colgate, James B.
1874 Constantine, Andrew J.
1874 Corning, Erastus.
1874 Cossitt, Frederick H.
1874 Coutan, Charles E.
1874 Conyngham, Wm. L.
1874 Crosby, Hiram B.
1874 Crocker, Geo. A.

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1874 Crocker, Wm. Baylies.
1874 Chickering, George H.
1874 Carter, Oliver S.
1875 Clendenin, J. W.
1875 Cameron, R. W.
1875 Cushman, W. F.
1875 Cooper, George C.
1875 Champlin, John D., Jr.
1875 Cassebeer, Henry A., Jr.
1875 Chittenden, S. B., Jr.
1876 Clarke, W. H.
1876 Cornell, John B.
1876 Curtis, Benj. L.
1876 Curtis, Benjamin R.
1879 Cooper, James G.
1879 Coddington, Gilbert S.
1879 Caldwell, R. A., M.D.
1879 Childs, George W.
1880 Calvin, Delano C.
1880 Clark, Lester W.
1880 Chamberlain, J. A.
1880 Cohen, Maurice S.
1880 Collins, John C.
1880 Cormack, John A.
1880 Caverley, William.
1880 Cronly, John E.
1881 Carnochan, J. M., M.D.
1881 Canfield, Charles B.
1881 Clinton, Henry L.
1881 Coddington, Thomas B.
1882 Cooper, Wm. B.
1882 Calhoun, William.
1882 Clarkson, Banyer.
1882 Campbell, Franklin W.
1882 Coudert, F. R.
1882 Conkling, Rev. N. W.
1882 Chapin, Wm. Viall.
1882 Cass, George W.
1882 Carolin, William V.
1883 Clarke, Thos. C.
1883 Chapman, Henry E. (L. F.)
1883 Colbron, W. T.
1883 Chase, H. D.
1883 Clyde, W. P.
1883 Clews, Henry.
1883 Coit, George M.
1883 Candler, Henry B.
1884 Claflin, John. (L. F.)
1884 Coggeshall, Edwin W.
1884 Cook, John C.
1884 Cary, Henry T.
1884 Cameron, A. M.
1884 Connor, W. E.
1884 Cummings, Geo. F.
1885 Church, Wm. C.
1885 Coming, Frederick G.
1885 Cady, C. E.

1855 Daly, Chief-Justice C. P. (L. F.)
1855 Dunshee, Prof. Henry W.
1856 Douglas, Andrew E.
1856 Dodge, Wm. E., Jr.
1856 Detmold, Wm., M.D.
1859 Dickerson, E. N.
1864 Detmold, Christian E.
1866 Darling, Wm. A.
1868 Dwight, Prof. Theo. W.
1868 Du Chaillu, Paul B.
1868 Dennis, Charles. (L. F.)
1870 Dash, John B.
1870 Davis, Alexander J. (L. F.)
1870 Drowne, Henry T.
1870 Dinsmore, William B.
1871 Daly, Joseph F.
1873 Delano, Franklin H.
1873 DePeyster, Gen J. Watts. (L. F.)
1874 Diefendorf, Menzo.
1874 Davis, Noah.
1874 Dillon, Romaine. (L. F.)
1874 Dutilh, E.
1874 Decker, Charles A.
1874 Delafield, M. L.
1874 Dana, Charles A.
1874 Draper, Frank E.
1874 Devlin, Jeremiah.
1874 Decker, John J.
1874 Del Monte, Leonardo.
1874 Du Bois, Wm. A.
1874 De Castro, Diego.
1874 Davis, John G.

1874 Dalrymple, Alexander.
1874 Dunscombe, Richard T.
1874 Dun, R. G.
1874 Defendorf, Wilson.
1875 Darrow, William.
1875 Davies, Julien T.
1875 Du Bois, Eugene.
1875 Daniel, Edwin M.
1875 Davidson, Charles A.
1875 De Peyster, Frederic J. (L. F.)
1875 Dommerick, L. F.
1876 Drexel, Joseph W.
1877 Day, Henry M.
1877 Davis, Joseph Beale. (L. F.)
1878 Dana, Charles.
1878 Di Cesnola, Gen. L. B.
1879 Dahlgren, Charles B.
1879 Dodge, George E.
1879 Dana, Samuel B.
1880 Davis, Theodore M.
1880 Deane, John H. (L. F.)
1880 Dyckman, Isaac M.
1880 Du Bois, James G.
1880 Du Bois, Frederick N.
1880 Dash, Bowie.
1880 Dexter, Henry. (L. F.)
1880 Deen, William M.
1881 Dean, F. M.
1881 Davies, H. B.
1881 Docharty, Augustus T. (L. F.)
1881 Dowd, William.
1882 Dunham, George H.
1882 Dunlap, Robert. (L. F.)
1882 Deems, Rev. C. F.
1882 Dodge, Richard H.
1882 Dunbar, James M.
1883 Demorest, W. J.
1883 Donnell, E. J.
1883 Decker, Jas. S.
1883 Dickson, Thos.
1884 Davis, Howland.
1884 Day, Henry.
1884 Donnelly, Francis F.
1884 Doane, George W.
1884 Dodge, Richard J.
1884 Dally, Henry, Jr.
1884 Douglas, Jas., Jr.
1884 Drake, Jas. M.
1885 Dupré, Ovide. (L. F.)
1885 Dakin, Ed. S.
1885 De Witt, George G.

1859 Evarts, William M.
1864 Evans, Walton W.
1868 Emmet, Thomas Addis, M.D.
1874 Eaton, Dorman B.
1874 Eaton, D. Cady.
1874 Ewen, John, Jr.
1875 Esterbrook, Richard, Jr.
1875 Ellis, John W.
1875 Elliott, John.
1875 Eimer, Charles.
1875 Ely, Richard S.
1875 Eads, Captain James B., C.E.
1877 Elderkin, John.
1878 Ellis, John, M.D.
1878 Edson, Franklin.
1879 Earl, Ferdinand P.
1879 Elliott, Samuel.
1880 Eckert, Thomas T.
1881 Ellis, Ralph N.
1881 Evans, Silas C.
1882 Easton, Nelson S.
1882 Edmonds, Walter D.
1882 Ellis, William Dixon.
1882 Eddy, Ulysses D.
1882 Earl, Abraham L.
1882 Edinger, August H.
1882 Edwards, J. Pierrepont.
1882 Emerson, J. W.
1882 Emmons, John.
1882 Earle, Joseph P.
1883 Eno, Amos F.
1883 Eyre, Maynard C.
1883 Earl, Wm. M.
1883 Emanuel, J. M.
1885 Elmore J. Federico.

1854 Field, Cyrus W. (L. F.)
1856 Field, David Dudley.

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1856 Field, B. H. (L. F.)
1857 Fish, Hamilton.
1860 Field, Rev. H. M.
1864 Faile, Thomas H.
1869 Forsyth, Rev. John.
1871 Fliess, Wm. M.
1873 Freedman, John J.
1874 Farragut, Loyall.
1874 Foshay, James W.
1874 Fabbri, Egisto P.
1874 Fellows, John P.
1874 Francklyn, C. G.
1874 Fleet, Oliver S.
1874 Forman, Alexander.
1874 Fox, Baldwin N.
1874 Fougera, Edmund C.
1874 Fox, Austen G.
1875 Foulke, Thomas.
1875 Faile, Charles V.
1875 Fargo, James C.
1875 Fuller, Charles D.
1875 Ford, James B.
1875 Folsom, George W.
1876 Fisk, Gen. Clinton B.
1877 Fiske, Andrew.
1878 Ferris, L. Murray, Jr.
1879 Fellows, John R.
1879 Ferris, Robert M.
1880 French, Stephen B.
1880 Fairchild, George M., Jr.
1881 Fearing, Charles F.
1881 Foote, Frederick W.
1881 Fearing, William H.
1882 Fairbanks, Leland.
1882 Fellows, Charles H.
1882 Falls, Thomas J.
1883 Fisher, Eustace W.
1884 Fraser, Alfred.
1884 Ferrer, Fermin.
1885 Frank, Elias L.
1885 Freeman, Frank Morgan.

1856 Greenwood, Isaac J.
1857 Greene, John W., M.D. (L. F.)
1859 Griswold, George. (L. F.)
1868 Gebhard, Wm. H. (L. F.)
1868 Gerry, Elbridge T. (L. F.)
1868 Green, Andrew H.
1868 Greene, Gen. G. S.
1869 Gilbert, Clinton.
1872 Gerard, James W.
1872 Grinnell, R. M. (L. F.)
1873 Gillmore, Gen. Q. A., U.S.A.
1873 Gedney, Frederick G.
1873 Glaubensklee, Theo. G.
1874 Green, John. (L. F.)
1874 Gunther, William Henry.
1874 Gunther, F. F.
1874 Gibert, Fred. E.
1874 Gibbs, Theodore K.
1874 Gottsberger, William S.
1874 Galpen, Horace.
1875 Greene, Lieut. F. V., U.S.A.
1875 Greene, G. S., Jr., C.E.
1875 Garrison, Cornelius K.
1876 Gautier, Dudley G.
1877 Gaylord, Augustus.
1877 Guleke, H. F., M.D.
1878 Gillies, James W.
1879 Graves, Arthur B.
1879 Gay, Joseph E.
1880 Gunning, William J.
1881 Gallaway, R. M.
1881 Gomez, A.
1881 Green, George. (L. F.)
1881 Giles, John C.
1881 Grace, William R. (L.F.)
1881 Garland, James A.
1881 Gallatin, James.
1882 Gillespie, Col. G. L.
1882 Gallaher, S. C.
1882 Gilbert, William E.
1882 Gallup, Albert.
1882 Gardiner, J. Graham.
1882 Gade, Frederick W.
1882 Garretson, Frederick P.
1883 Greenough, John. (L. F.)
1883 Granniss, James E.
1883 Gottschalk, Felix.
1883 Goodridge, John C., Jr. (L. F.)

1885 Glazier, Simon W.
1885 Granbery, Wm. H.
1885 Gibson, George R.
1885 Greenleaf, James L.

1856 Hewitt, Abram S.
1856 Hunt, Wilson G.
1859 Havemeyer, John C. (L. F.)
1864 Hammond, Henry B.
1868 Huntington, Daniel. (L. F.)
1868 Hurlbert, William H.
1868 Hoguet, Robert J.
1868 Hall, Elial F.
1868 Hadden, John A. (L. F.)
1868 Hallock, Mrs. Frances.
1870 Hawkes, Prof. W. Wright.
1870 Havens, Charles G.
1870 Harrison, Prof. Thomas F.
1871 Hamilton, Alexander, Jr.
1871 Hand, Clifford A.
1872 Hammersley, John W. (L. F.)
1872 Hawkins, Dexter A.
1872 Holbrook, Levi.
1873 Havemeyer, Theo. A.
1874 Hancock, Gen. Winfield S., U.S.A.
1874 Hay, John.
1874 Hitchcock, Rev. Roswell D., D.D.
1874 Havemeyer, Hector C.
1874 Hoguet, Henry L.
1874 Hoyt, Oliver.
1874 Hurlbert, Henry A. (L. F.)
1874 Haydock, George G.
1874 Haines, John P.
1874 Hinton, John H., M.D. (L. F.)
1874 Hendricks, M. M.
1874 Havemeyer, James.
1874 Holbrook, E. F.
1874 Hoe, Richard M.
1874 Harper, Nathan.
1874 Hendricks, Edmund.
1874 Hendricks, Joshua.
1874 Hatch, Rufus.
1874 Huntington, C. P. (L. F.)
1874 Hunter, Lieut. Edward, U.S.A.
1874 Hoyt, Harlow M.
1875 Hammond, Wm. A., M.D.
1875 Houston, Col. D. C., U.S.A.
1875 Hoadley, John C.
1875 Hughes, Wm. H. T.
1875 Hoppenstedt, G. L.
1875 Hanemann, John F.
1875 Howland, Meredith.
1875 Hyde, Henry B.
1875 Harper, P. J. A.
1875 Hazen, Gen. W. B., U.S.A.
1875 Harris, Siegmund.
1875 Hun, Leonard G.
1876 Heminway, Albert G.
1876 Holt, Henry.
1876 Halsted, Major Geo. B.
1876 Holman, Frank E.
1876 Hoes, Wm. M.
1876 Hatfield, J. B. T.
1877 Houghton, Prof. Walter R.
1878 Howe, George S.
1878 Hermann, Henry. (L. F.)
1878 Hinman, Wm. K.
1878 Hitchcock, Hiram.
1879 Hamilton, William G.
1879 Harris, Col. Robert.
1879 Hamilton, Capt. F. B., U.S.A.
1880 Hall, Hayden H.
1880 Hickox, Charles R.
1881 Hinman, Russell.
1881 Henderson, Thomas, Jr.
1881 Hoffman, Charles B.
1881 Hamilton, Robert Ray.
1881 Haven, George Griswold.
1882 Hascall, Theodore F.
1882 Higginson, James J.
1882 Hawk, William S.
1882 Hoag, Dr. W. E.
1883 Houston, Theodore.
1883 Hotchkiss, Horace L.
1883 Henry, Charles J.
1883 Hebert, Henry B.
1883 Howell, George R.
1883 Hyde, E. Francis.
1883 Hurry, Edmund Abdy. (L. F.)

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1883 Hoyt, Alfred M. (L. F.)
1883 Hendricks, Arthur T.
1885 Hubbard, Walter.
1885 Hewson, J. H.
1885 Holmes, Chas. S., Jr.
1885 Halsey, J. L.
1885 Hodges, N. D. C.
1885 Henry, Edward L.

1859 Ireland, John B.
1874 Ives, Fred'k E.
1874 Iselin, Adrian, Jr.
1879 Inman, William H.
1879 Isham, Charles H.
1881 Ives, Brayton. (L. F.)
1883 Ives, James M.
1885 Innes, William T.

1852 Jay, John. (L. F.)
1852 Jones, John D. (L. F.)
1868 Johnson, Hezron A.
1871 Jones, Walter R. T.
1874 Judson, Wm. D.
1874 Janssen, Gerhard.
1874 Jesup, M. K. (L. F.)
1874 Jaffray, Edward S.
1874 Jenkins, Wm. L.
1874 James, D. Willis.
1874 Jameson, Joseph A.
1874 Jordan, Conrad N.
1874 Jones, George.
1874 Jaffray, Robert.
1878 Jones, George H.
1878 Judson, Capt. J. A., C.E.
1879 Jay, William.
1880 Jewett, George L.
1881 Jewett, Hugh J.
1881 Johnson, Bradish, Jr.
1882 Jasper, John.
1882 Jenkins, Henry W.
1883 Judson, A. M.
1883 Jacobs, Abraham L.,
1883 Jager, A. Bernard.
1885 Juilliard, A. D.

1854 Kennedy, Robert Lenox.
1869 Kelly, Eugene.
1870 Kühne, Frederick.
1872 Kendrick, Col. H. L., U.S.A.
1873 Kennan, George.
1874 King, Edward.
1874 Kearney, Joseph R.
1874 Kunhardt, Henry R.
1874 Kingsland, Wm. M. (L. F.)
1874 Kidder, Henry P. (L. F.)
1874 Kalbfleisch, Charles H.
1874 Keck, Thomas.
1874 Knower, John.
1874 King, David, Jr.
1875 Knapp, Herman, M.D.
1876 Knauth, Percival.
1877 King, Clarence.
1878 Kernochan, Jas. Lorillard. (L. F.)
1879 Kane, S. Nicholson.
1880 Kidder, A. S., M.D.
1880 Keene, James R. (L. F.)
1881 Kennedy, John S. (L. F.)
1881 Kane, Grenville. (L. F.)
1881 Kirsch, Louis.
1882 King, Le Roy.
1882 King, George Gordon.
1882 King, John S.
1882 King, Vincent C. (L. F.)
1883 Kneeland, Henry T.
1883 Klutschalk, Henry W.
1883 Knapp, S. P.
1883 Kohn, Julius A.
1883 Kerr, Walter.
1884 Kountze, Augustus.
1884 Kahn, Dr. Herman.
1885 Keane, Joseph.
1885 Knapp, Samuel T., Jr.
1885 Keppler, Rudolph.

1852 Livingston, Cambridge. (L. F.)
1857 Low, A. A.
1859 Lathers, Richard. (L. F.)
1868 Lawrence, Abraham R.
1869 Lawrence, John S. (L. F.)
1870 Loew, Frederick W.

1870 Lyman, Edward H. R.
1871 Letson, Robert S.
1871 Larremore, Richard L.
1871 Lee, Ambrose.
1872 Libby, William. (L. F.)
1874 Lauterbach, Edward.
1874 Livingston, Robert J. (L. F.)
1874 Langdon, Walter. (L. F.)
1874 Lorillard, Peter.
1874 Lorillard, George L.
1874 Livingston, Robert E.
1874 Littlejohn, James.
1874 Lawton, Walter E.
1874 Lawrence, Jos. B.
1874 Legget, Francis W.
1874 Le Comte, Joseph.
1874 Lewis, Walter H.
1874 Lawson, Leonidas M.
1874 Lawrence, Samuel B.
1874 Lesher, Stephen R.
1875 Low, Seth.
1875 Lawrence, George N.
1876 Low, A. Augustus.
1877 Lockwood, Le Grand.
1877 Latrobe, John H. B.
1878 Loubat, J. F., LL.D. (L. F.)
1878 Leon, Nestor Ponce de.
1879 Levy, Augustus H.
1880 Lang, Alexander.
1880 Learned, Edward.
1880 Lee, William H.
1881 Libbey, William, Jr. (L. F.)
1881 Langdon, Woodbury G. (L. F.)
1881 Little, Joseph J. (L. F.)
1881 Livermore, Edwin R.
1881 Lee, J. Bowers.
1882 Lambert, Edward.
1882 Langdon, Woodbury.
1882 Lamont, Lansing.
1882 Ladd, William F.
1882 Le Roy, Herman R.
1882 Lapham, Lewis H.
1882 Lamborn, Robert H.
1883 Lowrie, J.
1883 Lummis, William.
1883 Lounsbery, R. P.
1884 Ludlam, George P.
1885 Lawrence, Fredk. N.
1885 Lane, Wm. H.
1885 Little, Robbins.

1852 Myers, Col. T. Bailey. (L. F.)
1853 Moore, George H. (L. F.)
1856 Monroe, Ebenezer.
1859 MacMullen, John.
1859 Morrell, Wm. H. (L. F.)
1859 Moore, Frank. (L. F.)
1863 May, Lewis.
1863 Moore, W. H. H. (L. F.)
1864 Morton, Levi P.
1868 Morrison, Henry.
1868 Moreau, John B.
1868 Martin, Isaac P.
1868 Marquand, Henry G.
1868 Marsh, Luther R.
1868 McClure, George.
1869 Moore, Henderson.
1870 Marbury, Francis F.
1870 Miles, Edward D.
1872 Meyer, F. William.
1872 Matthews, Edward. (L. F.)
1872 Marié, Peter. (L. F.)
1873 Moore, C. B.
1874 Morris, Henry L.
1874 Mailler, W. H.
1874 Marble, Manton.
1874 Morrison, Edward.
1874 Morgan, W. F.
1874 Miller, Philip S.
1874 Moir, James.
1874 Morgan, J. Pierpont. (L. F.)
1874 Myers, John K.
1874 Martin, John M.
1874 McAlpine, David H.
1874 Merrall, William J.
1874 Moulton, Clarence F.
1875 Mitchell, Edward.
1875 Macy, Arthur.
1875 Marcus, Arnold.
1875 Meyer, Theo. F. H.

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1875 Mott, Henry A., Jr.
1875 Monheimer, Joseph A.
1875 Magoun, George C.
1875 Maclay, Moses B.
1875 Martin, Bradley.
1875 Meyer, L. H.
1875 McLanahan, Geo. William.
1876 Mitchell, W. Howard.
1877 Matsell, George W.
1878 Morison, John C.
1878 Merrick, William H.
1878 Montant, Alphonse.
1878 Musgrave, Thomas B. (L. F.)
1878 Mason, Lieut. T. B. M., U.S.N. (L. F.)
1879 Marshall, William I.
1879 Mather, Frederick E.
1879 Motz, Ferdinand.
1879 Miller, John Bleecker.
1879 Montieth, James.
1880 Mills, D. O. (L. F.)
1880 Mason, Thomas D.
1880 Massey, Wm. M.
1881 McGee, Flavel.
1882 Marquand, John P.
1882 Marsh, Caleb P.
1882 Middleton, Austin D.
1882 McWilliams, John.
1882 Mury, Rev. Mylton.
1882 McKnight, C. H.
1882 Moore, W. T.
1882 Mead, Erastus F.
1882 Markoe, F. H., M.D.
1882 Mills, Samuel M.
1882 McElrath, Thomas.
1883 Marvel, William.
1883 Miller, H. K.
1883 McKay, Donald. (L. F.)
1883 McCreery, James. (L. F.)
1883 Morgan, E. D.
1883 Mali, Consul Charles.
1884 Moore, Joseph, Jr. (L. F.)
1884 Myers, Andrew G.
1885 Mackenzie, D. E.
1885 Morrison, George S.

1870 Neilson, William H.
1873 Neilson, Frederic.
1874 Newell, John. (L. F.)
1874 Niles, William W.
1874 Newcombe, Isaac B.
1875 Northrop, A. L.
1880 Nelson, William, Jr.
1882 North, Thomas M.
1882 Nesbit, John L.
1882 Naylor, Joseph.
1882 Nelson, Richard.
1883 Noble Charles C.
1884 Neumoegen, B.
1884 Newberry, Dr. John S.
1885 Nelson, George Francis.

1874 Ottendorfer, Oswald. (L. F.)
1874 Osgood, Franklin.
1874 Olyphant, Robert M.
1874 Oakley, E. Benedict.
1874 Owen, Frederick N.
1875 Otterbourg, Marcus.
1875 Ottiwell, John D.
1875 O'Connor, Thomas H.
1875 Opdyke, William S. (L. F.)
1876 Olmsted, Fred'k Law.
1876 Olmstead, Dwight H.
1877 O'Gorman, Richard.
1877 Ogden, Isaac C., Jr.
1878 Osgood, Prof. Howard.
1879 O'Gorman, Richard, Jr.
1879 O'Brien, Thomas S.
1880 O'Shaughnessy, John W. (L. F.)
1881 Oakley, Henry A.
1882 Oelrichs, Hermann.
1882 Osborn, W. H. (L. F.)
1882 Oppenheim, Ed. L.
1882 Osgood, William H.
1882 Olney, James B.
1882 Otis, Col. Charles G.
1883 O'Donohue, Jos. J.
1884 Orton, Dr. Samuel H.

1852 Poor, Henry V. (L. F.)
1852 Pierrepont, Henry E. (L. F.)

1855 Pierrepont, Edwards.
1857 Pyne, Percy R.
1859 Purser, George H.
1859 Prime, Fred'k E. (L. F.)
1862 Phillips, George W.
1868 Powers, William P.
1868 Paulison, John P.
1871 Peabody, Charles A.
1872 Parish, Henry.
1874 Peake, William I.
1874 Peabody, Arthur J.
1874 Penfold, William Ha.ll
1874 Phelps, I. N.
1874 Potter, Orlando B.
1874 Pondir, John.
1874 Paris, Sherman.
1874 Preble, John Q.
1874 Porter, John K.
1874 Packer, Elisha A.
1874 Powers, George J.
1874 Pellew, Henry E.
1874 Prichard, William M.
1875 Prentice, W. P.
1875 Pope, Gen John, U.S.A.
1875 Pfund, Anton.
1875 Porter, Gen. Horace.
1876 Parsons, Levi.
1876 Plum, James R.
1876 Palmer, Gen. W. J.
1878 Parsons, Edwin.
1880 Pinchot, James W.
1880 Powell, Wilson M.
1881 Post, Charles A.
1882 Parsons, Wm. (L. F.)
1882 Parsons, Wm. Barclay.
1882 Pallen, Montrose A.
1882 Perkins, C. Lawrence.
1882 Parrish, James C.
1882 Pell, Wm. Cruger.
1882 Parsons, Joseph H.
1882 Percival, James H.
1882 Parsons, Samuel.
1882 Paton, John.
1882 Platt, Hon. Thos. C.
1882 Peck, Walter J.
1882 Parsons, John E.
1882 Parsons, Charles.
1882 Peck, Charles M.
1882 Phillips, Charles H.
1882 Parsons, Mrs. E. (L. F.)
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1883 Parks, Robert H.
1884 Preiss, Edmund C.
1884 Post, George B.
1884 Place, George.
1884 Purdy, John F.
1884 Plush, Dr. Samuel.
1885 Post, Wm. Henry. (L. F.)
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1885 Pell, Charles E.

1882 Quackenbos, Dr. Henry F.
1883 Quinlin, Leonard G.
1885 Quinby, J. R.

1854 Rutherford, L. M.
1856 Randolph, Anson D. F.
1856 Remsen, William. (L. F.)
1856 Riker, John H.
1859 Rapallo, Charles A.
1861 Rogers, C. B. (L. F.)
1868 Raven, Anton A.
1868 Rose, Cornelius.
1872 Robbins, Chandler. (L. F.)
1874 Reid, Whitelaw.
1874 Richard, Auguste.
1874 Rogers, H. Livingston.
1874 Riker, William J.
1874 Requa, James M.
1874 Reynes, Jaime.
1874 Rhoades, John H.
1874 Ransom, F. A.
1874 Rhoades, Lyman.
1875 Roosevelt, Clinton.
1875 Rives, G. L.
1875 Roberts, Nathan B.
1875 Read, J. Meredith.
1875 Rose, Charles.
1875 Rosenfeld, Isaac.

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1876 Ross, William B.
1877 Rose, Theodore.
1877 Rice, A. Thorndike.
1877 Roome, William P.
1878 Roorback, Orville A.
1878 Rainey, Thomes, M.D.
1879 Redmond, James Morton.
1879 Rhinelander, Miss J. (L. F.)
1880 Robinson, Mrs. John A. (L. F.)
1881 Randolph, J. C. F.
1881 Robbins, George A.
1881 Rhinelander, Frederick W.
1882 Rhinehart, E.
1882 Ray, James D.
1882 Robbins, S. H.
1882 Reed, Wm. G.
1882 Rhinelander, T. J. O.
1882 Raven, Richard M.
1882 Redding, W. E.
1882 Riddle, Wm. G.
1882 Raynor, Samuel.
1882 Rolston, Roswell G.
1882 Rhinelander, Charles.
1882 Rathborne, C. L.
1883 Roberts, Sir Randal H.
1883 Rosenbaum, Albert S.
1883 Robbins, Daniel C.
1883 Richardson, Briton.
1883 Russell, Isaac F.
1883 Rowland, Thomas F.
1885 Rudkin, Wm. Henry.

1854 Sewell, Henry F.
1856 Spofford, Paul N.
1856 Schermerhorn, Wm. C.
1856 Sherman, W. Watts.
1859 Schultz, John H. (L. F.)
1860 Stout, Francis A. (L. F.)
1868 Seward, Clarence A.
1868 Shea, George.
1869 Savage, John. (L. F.)
1869 Strebeigh, Robert M.
1870 Schell, Richard. (L. F.)
1870 Sherwood, John.
1870 Schafer, Samuel M.
1870 Schafer, Simon.
1870 Seligman, James.
1870 Seligman, Jesse.
1871 Shaler, Gen. Alexander.
1871 Swan, William H.
1872 Stern, Myer.
1872 Stengel, Prof. Frederick.
1872 Steiger, E.
1872 Stuyvesant, Rutherfurd. (L. F.)
1873 Smith, James M.
1873 Slevin, Thomas E.
1873 Sturges, Frederick.
1873 Spencer, James C.
1873 Scott, Julian. (L. F.)
1873 Southworth, Alvan S. (L. F.)
1873 Sturgis, Frank K. (L. F.)
1874 Sands, Harry M.
1874 Steinway, William.
1874 Sands, Philip J.
1874 Smith, Samuel Drake
1874 Sloan, Samuel.
1874 Schermerhorn, F. Augustus.
1874 Stuyvesant, Robert R.
1874 Scudder, Henry J.
1874 Stuart, Joseph.
1874 Strong, W. L. (L. F.)
1674 Steward, D. Jackson.
1874 Stevens, Alexander Henry.
1874 Shethar, Samuel.
1874 Schieffelin, Samuel B.
1874 Stiger, William E.
1874 Stillwell, Benjamin M.
1874 Sawyer, Warren.
1874 Sands, Andrew H.
1874 Schaus, William.
1874 Spinney, Joseph S.
1874 Salomon, Edward.
1874 Sewell, Robert.
1874 Striker, J. A.
1875 Stanford, William H.
1875 Smith, Lewis Bayard.
1875 Smith, Charles Stewart.
1875 Sturges, Henry C.
1875 Schultz, Carl H.
1875 Sandford, Elliott. (L. F.)

1875 Stranahan, J. S. T.
1875 Schieffelin, H. Maunsell.
1875 Sibley, Gen. Henry H., U.S.A.
1875 Schiff, Jacob H.
1875 Schlesinger, Alfred.
1875 Smith, Apollos.
1875 Smith, Augustine.
1876 Smith, Harsen H.
1876 Sibley, Hiram W.
1876 Spaulding, Henry F.
1876 Smith, Dwight, M.D.
1876 Stryker, Gen. William S.
1876 Stone, A. B.
1877 Shearman, William P.
1877 Sandford, Henry S.
1877 Sanger, Major Joseph P., U.S.A.
1877 Schaff, Rev. Philip, D.D.
1878 Scott, James.
1878 Stewart, William Rhinelander.
1878 Sanford, A. Wright.
1878 Sands, William R.
1878 Smith, S. Newton.
1878 Sabla, Theodore de Joly de.
1879 Saltus, Edgar Evertson.
1879 Stone, R. C.
1879 Speir, Francis, Jr.
1879 Stevens, Frederick W. (L. F.)
1879 Smith, E. Reul. (L. F.)
1879 Shields, Prof. Charles W.
1879 Stetson, Francis Lynde.
1879 Squires, Grant.
1880 Southwick, Henry K.
1880 Starr, Theodore B.
1880 Suydam, John R., Jr.,
1880 Smythe, Henry.
1880 Stark, L. J. N.
1880 Stokes, George H.
1880 Savery, Bartlett M.
1881 Stone, Joseph F.
1882 Sass, Dr. Louis F.
1882 Schuyler, Spencer D. (L. F.)
1882 Samson, Felix.
1882 Sayre, Lewis A., M.D. (L. F.)
1882 Speir, Archibald W.
1882 Scott, George S.
1882 Skidmore, Wm. L.
1882 Sibley, Simeon W.
1882 St. John, W. P.
1882 Scribner, Charles.
1883 Schermerhorn, Charles A.
1883 Strout, A. P.
1883 Simpson, George E.
1883 Stone, Sumner R.
1883 Sinclair, John. (L. F.)
1883 Spence, Lewis H.
1883 Smith, William Alex.
1883 Smith, Henry N.
1883 Stern, Louis.
1883 Schwenniger, Rev. Anton B.
1883 Sanger, Wm. Cary.
1883 Steers, James R., Jr.
1883 Scott, Rufus L.
1883 Sorgano, Julio F.
1883 Stout, Joseph S.
1883 Spice, Elihu, Jr.
1884 Schley, J. Montfort, M.D.
1884 Seguin, E. C., M.D.
1884 Schwatka, Lieut. F., U.S.A.
1884 Shannon, Robert H.
1884 Stokes, James.
1885 Storer, Albert.
1885 Sturgis, Russell.
1885 Sachs, Julius.
1885 Slote, Henry L.
1885 Stanton, S. Franklin.
1885 Storm, Walter.
1885 Schmelzel, Wm. R.

1856 Tiffany, Charles L.
1856 Townsend, Randolph W.
1868 Taylor, Douglas.
1868 Tilden, Samuel J.
1870 Tuckerman, Lucius.
1870 Thomson, James.
1872 Tower, Gen. Z. B., U.S.A.
1874 Thompson, David G. (L. F.)
1874 Tiemann, Peter C.
1874 Tefft, Erastus T.
1874 Trevor, John B.
1874 Taylor, Alfred J.

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1874 Thorne, William H.
1874 Turner, Herbert B.
1874 Terry, Comdr. Edward, U.S.N.
1875 Taintor, Charles M.
1875 Terry, Gen. Alfred H., U.S.A.
1875 Toel, William.
1875 Terbell, Henry S.
1876 Totten, Lieut. George Mansfield, U.S.N.
1876 Terry, Rev. Roderick.
1877 Tillinghast, William H.
1877 Talcott, James. (L. F.)
1878 Tucker, Rev. William J., D.D.
1878 Taylor, Rev. Wm. M., D.D.
1879 Thompson, J. P.
1879 Turnbull, Robert J.
1880 Tailer, William H.
1881 Thompson, R. H.
1881 Travers, J. P.
1881 Taylor, A. D.
1882 Thurber, H. K.
1882 Taber, Henry M. (L. F.)
1882 Thomson, Eugene.
1882 Tailer, Edward N. (L. F.)
1882 Terry, John T.
1882 Taintor, Giles E.
1883 Twombly, Hamilton McK.
1883 Tutt, W. H., M.D.
1883 Trumbull, Rev. H. Clay, D.D.
1883 Thalmann, Ernest.
1884 Taltaval, Wm. A.
1884 Turner, J. Spencer.
1884 Thoron, Joseph.
1885 Tone, T. Wolfe.
1885 Tiffany, Rev. C. C.
1885 Turnure, Lawrence.

1884 Utter, Dr. Francis A.

1854 Viele, Gen. Egbert L.
1868 Van Santvoord, C.
1869 Vanderpoel, Aaron J.
1870 Van Brunt, Charles H.
1874 Voorhis, William.
1874 Vincent, Frank, Jr.
1874 Van Rensselaer, K.
1875 Vance, Samuel B. H.
1875 Van Buren, John D., Jr.
1875 Valentine, Lawson.
1875 Von Post, H. C. (L. F.)
1875 Vanderpoel, A. Ernest.
1875 Verhuven, Henry F.
1876 Van Hoesen, George, M.
1876 Van Brunt, Cornelius.
1877 Vanderbilt, Cornelius.
1877 Voorhees, Charles H.
1878 Vanderbilt, William K. (L. F.)
1879 Voorhis, John R.
1880 Von Hesse, Christern.
1880 Van Alen, James H.
1880 Van Tassell, Frank L.
1881 Vantine, A. A.
1882 Vail, M. M.
1882 Vincent, Rev. Marvin R.
1883 Valentine, Daniel K.
1884 Van Siclen, Geo. W.
1885 Valentine, Henry C.

1854 Webb, William H.
1854 Witthaus, G. H. (L. F.)
1859 Ward, George Cabot. (L. F.)
1866 Wendell, Jacob.
1868 White, Alexander M.
1869 Weber, Leonard, M.D.
1870 Webster, Sidney.
1870 Wilson, Gen. Jas. Grant. (L. F.
1870 Wright, E. Kellogg.
1870 Weston, Theodore C. E.
1870 Ward, T. W.
1872 Wetmore, Wm. Boerum. (L. F.)
1872 Williams, Stephen C. (L. F.)
1872 Wells, Jacob.
1873 Weiner, Joseph, M.D. (L. F.)
1874 Weyman, Charles S.
1874 Waite, Chief-Justice M. R.
1874 Wheeler, Everett P.
1874 Wadsworth, Julius.
1874 Wetmore, George P. (L. F.)
1874 Wyckoff, Jacob F.
1874 Wilder, Marshall P.

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1874 Walraven, Ira E.
1874 Wooster, George H.
1875 Work, J. Henry.
1875 Wheeler, John V.
1875 White, Charles Trumbull.
1875 Wilcox, Franklin A.
1875 White, David C. E.
1875 Winslow, Gen. Edward F.
1875 Whitehead, Comdr. Wm., U.S.N.
1875 White, Loomis L.
1875 Wissman, J. F.
1876 Wedemeyer, A. J. D.
1876 Wrigley, Henry E., C. E.
1877 Ward, W. S.
1877 Waters, James T.
1877 Woodruff, Col. D., U.S.A.
1878 Whitehead, Henry M.
1878 Wood, Isaac F.
1878 Watson, William.
1878 Whittemore, Charles.
1879 Watson, Francis A. (L. F.)
1879 Woodbury, Charles H.
1879 Wirths, Maurice.
1879 Wolfe, Miss Catherine. (L. F.)
1880 Williams, R., Jr.
1881 Wilson, James.
1881 Wilson, John.
1881 Whitehouse, Frederic C.
1882 Welch, Uriah.
1882 Watson, Frederick.
1882 Wadsworth, John H.
1882 Willis, Benjamin A. (L. F.)
1882 Waddingham, Wilson.
1882 Williams, Francis W.
1882 Williams, John L.
1882 Willard, Daniel W.
1882 Williams, David. (L. F.)
1882 Winthrop, Robert. (L. F.)
1883 Weeks, Wm. R.
1883 Wilson, Richard T.
1884 Wheelwright, Wm. D.
1884 Watson, George H.
1884 Wood, Wm. H. S.

1871 Youngs, Henry I.
1874 Young, Mason.
1879 Yates, Ellis Samuel.
1880 Young, William.

1875 Zollikoffer, Oscar.
1884 Zabriskie, Andrew C. (L. F.)

FELLOWS DECEASED, 1885.

Butler, Charles.
Ballin, Eugene S.
Barbour, Thomas.
Brown, Augustus L.
Ballin, Fred. E.
Corse, Israel.
Cowdrey, N. A.
Gorringe, Lieut. H. H.
Gellatly, Wm. A.
Manners, David S.
Murray, D. Colden.
Mattson, Morris, M.D.
Prime, Frederick.
Reckendorfer, Joseph.
Reinhart, B. F.
Smith, James O., M.D.
Storrs, Charles.
Scott, Col. H. L.
Sherman, Benj. B.
Simion, Leonhard.
Tracy, Charles.
Vanderbilt, Wm. H.
Wetmore, Samuel.
Winston, Fred. S.
Wilkes, George.
Whittemore, Thos. W.
Wheeler, Ezra.

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List of Foreign and Domestic Geographical and other Scientific Bodies with which this Society is in Communication and Constant Exchange of Publications.

ARGENTINE REPUBLIC :

Academia Nacional de Ciencias, Córdoba.
Instituto Geográfico Argentino, Buenos-Aires.
Instituto Histórico-Geográfico del Rio de la Plata, Buenos-Aires.
Sociedad Científica Argentina, Buenos-Aires.

AUSTRALIA :

Department of Mines, Sydney, N. S. W.
Linnean Society of New South Wales, Sydney, N. S. W.
Royal Society of New South Wales, Sydney, N. S. W.
Royal Society of Queensland, Brisbane, Queensland.
Melbourne Observatory, Melbourne, Victoria.
Royal Society of Victoria, Melbourne, Victoria.

AUSTRIA :

Ferndinandeum, Innsbruck.
Gesellschaft der Wissenschaften, Prague.
K. K. Akademie der Wissenschaften, Vienna.
K. K. Geographische Gesellschaft, Vienna.
K. K. Geolog. Reichsanstalt, Vienna.
K. K. Naturhist : Hofmuseum, Vienna.

BELGIUM :

Société Belge de Géographie, Antwerp.
Académie Royale de Belgique, Brussels.
Institut National de Géographie, Brussels.
Le Mouvement Géographique, Brussels.
Société Royale Belge de Géographie, Brussels.

BRAZIL :

Bibliotheca Nacional, Rio de Janeiro.
Instituto Historico, Geographico, e Ethnographico do Brazil, Rio de Janeiro.
Museu Nacional, Rio de Janeiro.
Observatorio, Rio de Janeiro.
Secção da Sociedade de Geographia de Lisboa no Brazil, Rio de Janeiro.
Sociedade de Geographia, Rio de Janeiro.

CALIFORNIA :

Academy of Sciences, San Francisco.
Geographical Society of the Pacific, San Francisco.
Mercantile Library Association, San Francisco.
State Agricultural Society, Sacramento.

CANADA :

Hamilton Association, Hamilton, Ontario.
Geological and Natural History Survey of Canada, Ottawa.
Royal Society of Canada, Ottawa.

Geographical Society, Quebec.
Literary and Historical Society of Quebec
Canadian Institute, Toronto.

CHILI :
Der Deutsche Wissenschaftliche Verein, Santiago.
Observatorio Astronómico, Santiago.
Oficina Central de Estadística, Santiago

CHINA :
China Branch of the Royal Asiatic Society, Shanghai
Statistical Department, Inspectorate-General Imp. Maritime Customs, Shanghai.

CONNECTICUT :
Connecticut Academy of Arts and Sciences, New Haven
Library of Yale College, New Haven.

DENMARK :
Royal Danish Academy of Sciences, Copenhagen.
Royal Danish Geographical Society, Copenhagen
Society of Northern Antiquaries, Copenhagen.

DISTRICT OF COLUMBIA :
Philosophical Society, Washington.
Smithsonian Institution, Washington

EGYPT :
Société Khédiviale de Géographie, Cairo.

ENGLAND :
Royal Cornwall Polytechnic Society, Falmouth.
Literary and Philosophical Society, Liverpool.
British Association for the Advancement of Science, London.
Royal Asiatic Society, London.
Royal Geographical Society, London.
Royal Society, London.
Statistical Society, London.
Victoria Institute, London.
Literary and Philosophical Society, Manchester.
Manchester Geographical Society, Manchester.
Statistical Society, Manchester.
Royal Geological Society, Penzance.
Yorkshire Philosophical Society, York.

FRANCE :
Société Académique de Maine-et-Loire, Angers.
Société de Géographie Commerciale, Bordeaux.
Société des Sciences Naturelles, Cherbourg.
Union Géographique du Nord de la France, Douai.
Société de Géographie Commerciale, Havre.
Société de Géographie, Lyons.
Société de Géographie, Lille.

Société de Géographie, Marseilles.
Société Languedocienne de Géographie, Montpellier.
Revue de Géographie, Paris.
Société de Géographie, Paris.
Société de Géographie Commerciale, Paris.
Société de Géographie, Rochefort.
Société Normande de Géographie, Rouen.
Société de Géographie, Saint-Nazaire.
Société Académique Franco-Hispano-Portugaise, Toulouse.
Société de Géographie, Toulouse.
Société de Géographie, Tours.
Société Polymathique du Morbihan, Vannes.

GERMANY :

Afrikanische Gesellschaft, Berlin.
Anthropologische Gesellschaft, Berlin.
Deutscher Kolonialverein, Berlin.
Gesellschaft für allgem. Erdkunde, Berlin.
Gesellschaft für Erdkunde, Berlin.
Geographische Gesellschaft, Bremen.
Geographische Gesellschaft, Carlsruhe.
Verein für Erdkunde, Darmstadt.
Isis, Dresden.
Verein für Erdkunde, Dresden.
Naturforschende Gesellschaft, Emden.
Physikal. Verein, Frankfurt-a-M.
Verein für Geog. und Statistik, Frankfurt-a-M.
Naturforschende Gesellschaft, Görlitz.
K. Gesellschaft der Wissenschaften, Göttingen.
Geographische Gesellschaft, Greifswald.
Verein für Erdkunde, Halle-a-S.
Geographische Gesellschaft, Hamburg.
Geographische Gesellschaft, Hanover.
Geographische Gesellschaft, Jena.
Naturwiss. Verein für Schleswig-Holstein, Kiel.
K. Gesellschaft der Wissenschaften, Leipzig.
Verein für Erdkunde, Leipzig, Germany.
Geographische Gesellschaft, Lübeck.
Verein für Erdkunde, Metz.
Akademie der Wissenschaften, Munich.
Geographische Gesellschaft, Munich.
Verein für Handelsgeographie, Stuttgart.
Verein für Vaterländ. Naturkunde, Stuttgart.
Verein für Naturkunde, Wiesbaden.

HOLLAND :

Aardrijks. Genootschap, Amsterdam.

Revue Coloniale Internationale, Amsterdam.
K. Instituut voor de Taal- L- en V-van Nederlandsch-Indië, The Hague.
Nederlandsch Meteor. Instituut, Utrecht.

HUNGARY :
Gewerbeschule, Bistritz.
Hungarian Academy of Sciences, Buda-Pesth.
Hungarian Geog. Society, Buda-Pesth.
Royal Hungarian University, Buda-Pesth.
Verein für Siebenbürg. Landeskunde, Hermannstadt.

INDIA :
Geographical Society, Bombay.

INDIANA :
Brookville Society of Natural History, Brookville.

IOWA :
Academy of Natural Sciences, Davenport.
Historical Society, Iowa City.

IRELAND :
Natural History and Philosophical Society, Belfast.
Royal Dublin Society, Dublin

ITALY :
Sez. Fiorentina della Società Africana, Florence.
Società d'Esplorazione Commerciale, Milan.
Società Africana d'Italia, Naples.
Biblioteca Nazionale Centrale Vittorio Emanuele, Rome.
Società Geografica Italiana, Rome.
Circolo Geografico Italiano, Turin.
Società di Geog. ed Etnografia, Turin.

JAPAN :
Asiatic Society, Yokohama.
Geographical Society, Tokio.
Seismological Society, Tokio.

JAVA :
Bataviaasch Genootschap van Kunsten en Wetenschappen, Batavia.

MARYLAND :
Naval Institute, Annapolis.

MASSACHUSETTS :
Appalachian Mountain Club, Boston.
Boston Society of Natural Sciences, Boston.
Peabody Museum, Cambridge.
American Association for the Advancement of Science, Salem.
American Naturalist, Salem.
Essex Institute, Salem.
Peabody Academy of Science, Salem.
American Antiquarian Society, Worcester.
Society of Antiquity, Worcester.

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MEXICO :
Museo Nacional, Mexico.
Observatorio Meteorol. Magn. Central, Mexico.
Sociedad Mexicana de Geografia y Estadística, Mexico
MICHIGAN :
American Meteorological Journal, Ann Arbor.
MINNESOTA :
Academy of Natural Sciences, Minneapolis.
MISSOURI :
Academy of Sciences, St. Louis.
NEBRASKA :
State Historical Society, Lincoln.
NEW YORK :
State Museum of Natural History, Albany.
Long Island Historical Society, Brooklyn.
Society of Natural Sciences, Buffalo.
Academy of Sciences, New York.
New York Historical Society, New York.
New York Linnean Society, New York.
Vassar Brothers Institute, Poughkeepsie.
Oneida Historical Society, Utica.
NEW ZEALAND :
The Institute, Wellington.
NORWAY :
Royal University, Christiania.
OHIO :
Cincinnati Society of Natural History, Cincinnati.
Western Reserve and Northern Ohio Historical Society, Cleveland.
PENNSYLVANIA :
Academy of Natural Sciences, Philadelphia.
Second Geological Survey of Pennsylvania, Philadelphia.
Historical and Geological Society of Wyoming, Wilkesbarre.
PORTUGAL :
Academia Real das Sciencias, Lisbon.
Commissão Central Permanente de Geographia, Lisbon.
Sociedade de Geographia, Lisbon.
Sociedade de Geog. Comm. do Porto, Oporto.
ROUMANIA :
Societatea Geog. Română, Bucharest
RUSSIA :
Société des Naturalistes de la Nouvelle Russie, Odessa.
Orenburg Section of the Imp. Russ Geog. Society, Orenburg.
Imperial Russian Geographical Society, St. Petersburg.
Caucasian Section of the Imp. Russ. Geog. Society, Tiflis.
SCOTLAND :
Geological Society, Edinburgh.

Royal Society, Edinburgh.
Scottish Geographical Society, Edinburgh.
Philosophical Society, Glasgow.

SPAIN :

Asociacion Euskara, Madrid.
Sociedad Española de Geografia Comercial, Madrid.
Sociedad Geográfica, Madrid.
Real Academia Española Arqueológica y Geográfica, Madrid.

SWEDEN :

Society for Anthropology and Geography, Stockholm.
Société Entomologique, Stockholm.
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Report on Geographical and Topographical Surveys of Territory West of the 100th Meridian, by Capt. G. M. Wheeler, Washington, 1884 ; Hand-Book for India : Part I., Madras, Part II., Bombay, Murray, London, 1859 ; Hand-Book for Sicily, Murray, London, 1864 ; Lobo's Voyage to Abyssinia, tr. by Samuel Johnson, LL.D., London, 1789 ; Lyell's Travels in North America in 1841–42, New York, 1845 ; Two Years in Fiji, by Litton Forbes, London, 1875 ; Letter to H. M. Durand, Fsq., by Major Evans Bell (on Holkar's Conduct, 1857), London, 1884 ; The Open Polar Sea, by I. I. Hayes,

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New York, 1867 ; Appleton's Southern and Western Guide, New York, 1850 ; Einleitung zur Allgemeinen Vergleich. Geographie, von Carl Ritter, Berlin, 1852 ; A Star in the West, or a Humble Attempt to Discover the Ten Tribes, by E. Boudinot, Trenton, 1816 ; Pocket Atlas, Amsterdam, n. d.; Haverty's Irish-American Almanac, 1885 ; Report of N. Y. State Survey, 1884 ; Historical Sketch of Fortifications of Narragansett Bay, by Gen. G. W. Cullum ; Catalogues : Library of Wm. Mitchell, New York, Library of H. B. Anthony, Library of Rezin A. Wright, Library of Joseph J. Cooke ; Russian Reproductions at the Metropolitan Museum, by John W, Miles, New York, 1884 ; Cope Whitehouse's Latest Researches in the Mœris Basin, 1884 ; Fac-simile of G. Humble's Map of Africa, 1626 ; Protocols of the Berlin Conference, 1884–85.

From Capt. Bedford Pim, R. N. :

Reports of the British Association for the Advancement of Science, 1863–1881, 1883, 20 Vols.

From Mr. W. B. Ewer :

Historical Chart of Nantucket, by the Rev. F. C. Ewer, New York, 1869.

From Gen. Geo. W. Cullum :

Report of N. Y. State Survey, 1884 ; A Few Words on Wire-Wound Guns, by W. E. Woodbridge, Washington, 1884 ; Report of the Gun-Foundry Board, Washington, 1884 ; Executive Documents, House of Representatives, Nos. 36, 53, 61, 64, 71, 72, 74, 75, 84, 89, 91, 95, 96, 98, 99, 102, 107, 113, 116, 132, 133, 135, 137, 138, 139 ; Letter from W. W. Corcoran, with Report on Washington Monument ; Executive Documents, Senate, Nos. 3, 5, 15, 21, 23, 24, 27 ; The Impending Crisis in Finances, by Edwards Pierrepont, New York, 1885 ; Annual Report on Yorktown Monument, Washington, 1884 ; Laws of Corps of Engineers, U. S. A., 1883–1884 ; Sea-Coast Defences, Report of Chief of Engineers, Washington, 1884 ; Report of Chief of Engineers, Washington, 1884 ; Defences of Narragansett Bay, by Maj-Gen. G. W. Cullum, Washington, 1884 ; Letters from Secretary of War, On Gedney's Channel, Lake Champlain, Clinton River, Darien Harbor, Cashie River, Scioto River, Pensacola Harbor, Napa River, Congaree River, Cypress Bayou, Bogue Sound, Sny Island, Wood Island Harbor, Green and Barren Rivers, York Harbor, Ohio River, Bayou Bartholomew, Scajacuada Creek, Lock

at St. Mary's Falls, Providence Harbor, Newport Harbor; Letter from the Secretary of the Treasury, on David's Island; Annual Report, Chief of Engineers, for 1884; Chart of the North American Polar Regions, 1885; Official Table of Distances for the Guidance of Disbursing Officers of the Army, etc., Washington, 1885; Detailed Drawings of St. Mary's Fall, Canal, and Locks, 1882–1884, Washington; Preliminary Map of the Lower Mississippi from the Mouth of the Ohio, Sheets 7, Washington, 1881–85.

From J. Bartholomew, Edinburgh:

Orographical Map of Scotland; Reduced Ordnance Map of Edinburgh District, Scotland; Ordnance Survey Plan of London; Bartholomew's Library Chart of the Word (8 Sheets).

From Mr. Chas. H. Kalbfleisch:

La Geografia di Claudio Ptolemeo Alexandrino, con le Tavole non solamente antiche e moderne, ecc., in Venetia, 1548.

From F. Hirth, Shanghai:

China and the Roman Orient: Researches into their Ancient and Mediæval Relations, by F. Hirth, Leipzig and Shanghai, 1885.

From Néstor Ponce de Leon:

Diccionario Tecnológico Ingles—Español y Español—Ingles, by Néstor Ponce de Leon, New York, 1883–85.

From Pedro V. Azpurúa:

Anales de Venezuela, Documentos para la Historia, etc., por Ramon Azpurúa, Tomo 1°, Carácas, 1877; Biografias de Hombres Notables de Hispano-América, por Ramon Azpurúa, 4 Tomos, Carácas, 1877.

From Manuel M. de Peralta, Envoy of Costa Rica and Nicaragua:

Costa Rica, Nicaragua y Panamá en el Siglo XVI., Su Historia y sus Limites, etc., por Don Manuel M. de Peralta, Madrid y Paris, 1883.

From Mr. J. Carson Brevoort:

Margarita Philosophica, 6 Copies: Argentine, 1512; Argentorati, 1515, (cum Appendice); Argentinæ, 1504; Edition marked 1504, but verses facing title are dated MCCCCLXXXXVI.; Argentorati (?) 1503; Edition marked 1503; Reproductions of Maps: Mapamundi of Seb. Cabot, 1544; Tabula Terræ Novæ, Ptolemy of 1513; Oceanus Occidentalis, Ptolemy of 1513; Typus Univ. Marg. Phil. of 1515; Univ. Cog. Orbis Tab., Ruysch, 1508; Mapamundi, Ver-

razzano, 1529; Nouveau Voyage à la Mer du Sud, par Crozet et Surville, Paris, 1783; MS. Extrait du Journal d' un Voyage sur le Vaisseau Comm., par M. de Surville; MS. Extrait du Journal d' un Voyage, etc., par le Sieur Pottier de l' Horme; Grönland geographisk og statistisk beskrevet af H. Rink, Kjöbenhavn, 1857; Voyage en Californie pour l' Observation du Passage de Vénus sur le Disque du Soleil, le 3 Juin 1769, etc., par M. Chappe d' Auteroche, Rédigé et Publié par M. de Cassini fils, Paris, 1772; MS. Mémoire Historique sur le Voïage de la Californie, etc., par M. Pauly, Compagnon de M. l' Abbè Chappe; MS. Journal du Voyage du Joseph Royal à la Mer du Sud, 1719–1723, Tenu par le Sieur de la Pallierre Christy; MS. Journal de Navigation, Tenu par moy François Bouttier, dans le Voyage de Manille, 1718–1719; Map of Africa, by Giacomo di Castaldi (in 2 Sheets), Venetia, 1564; The Flag Carried by C. F. Hall to King William's Land; Tabulæ Geographicæ Cl. Ptolemei ad mentem autoris restitutæ et emendate per Gerardum Mercatorem Illustriss: Ducis Clivie, etc., Cosmographum, Duysburgi, 1578.

From Prince Roland Bonaparte:

Les Habitants de Suriname, Notes Recueillies à l' Exposition Coloniale d' Amsterdam en 1883 (Bonaparte), Paris, 1884; Collection des Photographies des Kalmouks (Bonaparte), Paris, n. d.; Les Derniers Voyages des Néerlandais à la Nouvelle-Guinée, (Bonaparte), Versailles, 1885; Les Premières Nouvelles Concernant l' Eruption du Krakatau, Paris, 1884.

From Franz Wieser, Author, Innsbrück:

Zoana Mela, Ein Beitrag zur Geschichte der Erdkunde in den Ersten Decennien des XVI Jahrhunderts, (Pamphlet); Ein Bericht des Gasparo Contarini über die Heimkehr der Victoria von der Magelhães' schen Expedition (Pamphlet).

From Hon. O. B. Potter:

Commercial Relations 1882–83, Washington, 1884; Foreign Relations 1883, Washington, 1884; Report of Board of Regents of the Smithsonian Institution, 1883, Washington, 1885; Report of the Bureau of Ethnology, 1880–81, Washington, 1883; Fourth Annual Report of the U. S. Geological Survey, Washington, 1884; Report of the Department of Agriculture for 1884, Washington, 1884.

From Com. Lucien N. B. Wyse, French Navy:

Le Canal de Panamá, L'Isthme Américain, Exploration; Com-

paraison des Tracés Etudiés ; Négociations ; Etat des Travaux ; Ouvrage Contenant une Grande Carte de l' Isthme Colombien, Un Plan Panoramique du Canal de Panamà supposé achevé, etc., Paris, 1886.

From Col. T. Bailey Myers :

Résumé des Travaux de l' Expédition Polaire Danoise Internationale, Copenhague, 1884 ; Il Meridiano Iniziale e l' Ora Universale, Ferdinando Borsari, Napoli, 1883 ; The Late Attacks on the Coast and Geodetic Survey, Philadelphia, 1884.

From the Hon. S. S. Cox :

Census of the United States for 1880, Vols. X., XI. ; Statistics and Technology of the Precious Metals, by S. F. Emmons and G. F. Becker (Tenth Census, Vol. XIII.), Washington, 1885.

From the American Institute, New York :

21 Mounted Maps : Texas, New York City, New York Bay, City and County of New York, Long Island, Silurian Strata of America, Japan, Hydrography of the Upper Mississippi Basin, American Arctic Expedition, Origin of Steam Navigation, Map of the World, United States, Historical Chart, Chart of the French Kings, Geological Chart of the Globe, Map of Europe.

From J. Stanley Grimes :

Geonomy : Creation of the Continents by the Ocean Currents—an Advanced System of Physical Geology and Geography, Philadelphia, 1885.

From E. Y. Robbins, Author :

Where to Find the Healthiest Climate in the United States, etc., Cincinnati, 1883.

From L. Holbrook, Esq. :

Commercial and Financial Chronicle, Vols. XXXVI. and XXXVII.

From the Publishers of the Free Press and Diplomatic Review, London :

The Free Press, Vols. I., III., IV., V. (incomplete) ; Vols. VI.–XIII. (bound in 4) ; The Diplomatic Review, Vol. XIV., 12 Nos. ; Vol. XV., Jan.–Aug., 1867 ; Vols. XVI., XVII., XIX., XX., XXI., XXII., XXIV. (incomplete) ; Supplements to the Free Press, 12 Nos. : The Flag of Circassia ; The Secret of Russia ; Diplomatic Serials, May, 1867 ; Islam as a Political System ; The Russo–Dutch Loan ; Fac-simile of Declaration (as if of War) by England against

Russia, 1807; Legal Position of the Sepoys; Will of Peter the Great; Restoration of Oude; Danish Succession; Restoration of Poland; Distress in Lancashire; Grain Trade of the Northwest; Sayings and Doings of Sir John Bowring; British Government at the Cape of Good Hope; Petition to the Queen to Call Mr. Urquhart; Adresse au Sultan; The General Election, Feb. 28, 1880; Cyprus and Tunis; The Turkish Commercial Treaty of 1838.

From W. E. Griffis, Author:

Corea, Without and Within, by Wm. Eliot Griffis, Philadelphia, 1885.

From Lécine et Oudin, Publishers, Paris:

Le Petrole, Son Histoire, Ses Origines, etc., Par F. Hue, Paris, 1885; L'Afghanistan: Les Russes aux Portes de l' Inde, par Charles Simond, Paris, 1885.

From José Ygnacio Vergara, Director:

Observaciones Meteorológicas Hechas en el Observatorio de Santiago, 1873–1881, Santiago de Chile, 1884.

From J. H. Brownlee:

Map of the County of Brandon, Manitoba.

From Lieut. J. B. Bernadon:

Native Map of a Trip Made by him from Söul, Corea, to Peng Yang.

From M. Charles Faure, Geneva:

Notice sur Arnold Guyot, 1807–1884.

From Mr. R. H. Shannon:

Ravenstein's Graphic Map of European Possessions in Africa.

From Capt Willard Glazier:

Map Illustrative of his Voyage to the Source of the Mississippi River, 1881.

From Mr. Ed. Trenchard:

Record of the Services of Rear-Admiral Trenchard, New York, 1884.

From M. H. Oudin, Paris:

Autour du Tonkin, Paris, 1884.

From B. Bossi:

Las Manchas Solares y el Estado Actual de Nuestro Planeta, Montevideo, 1885.

From A. R. Colquhoun, Author:

English Policy in the Far East, London, 1885.

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Report for 1884–85.

From Mr. John E. Body :

Mapa de Guatemala, 1859; Mapa de Salvador, 1859; Mapa de Nicaragua, 1859; The Channel Tunnel, by Prof. Boyd Dawkins, Salford, 1882; The Delta of the Danube, by Sir Ch. Aug. Hartley, London, 1862.

From Albert S. Gatschet, Washington :

Le Taensa a-t-il été forgé de Toutes Pièces? Réponse à M. Daniel G. Brinton, A.M., M.D., par Lucien Adam (Pamphlet), Paris, 1885; Dom Parisot ne produira pas le Manuscrit Taensa, Lettre à M. Victor Henry par Lucien Adam (Pamphlet), Paris, 1885.

From Maturin M. Ballou, Author :

Due West, or Round the World in Ten Months, Boston, 1885.

From William M. Stewart, Author, San Francisco :

Bondholders' Conspiracy to Demonetize Silver, Legislation Affecting National Debt, etc. (Pamphlet), San Francisco, 1885.

From the Nebraska State Historical Society :

Transactions and Reports, Vol. I., Lincoln, 1885.

From E. L. Corthell, C. E., Author :

Tehuantepec Ship Railway, Philadelphia, 1885; Discussion of the Paper "The Radical Enlargement of the Erie Canal," 1885.

From Lieut. F. W. Danenhower, U. S. N. :

The Polar Question, 1885.

From Geo. H. Cook, State Geologist of New Jersey :

Atlas of New Jersey, Sheets 2, 3, 4, 6, 7, 16.

From Robt. H. Pollock :

Folding Map of Virginia and Maryland, 1775, London; Folding Map, Sketch of the Northern Frontiers of Georgia, London, 1780.

From Silas Bent, St. Louis :

Meteorology of the Mountains and Plains of North America, St. Louis, 1885.

From Charles Tracy, Utica :

Historical Discourse at the Whitestown Centennial, Utica, 1885.

From D. B. McCartee :

Hawaiian Almanacs for 1880–82, Honolulu.

From Geo. B. Reed, Boston :

Chile, Boston, n. d.; Difficulty between Chile and Peru and Bolivia, Boston, n. d.

From F. Vidal Gorriaz, Santiago :

Estudios Hidrográficos sobre la Patagonia Occidental, Santiago de Chile, 1883.

From J. Du Fief, Author :

La Question du Congo, Bruxelles, 1885.

From Dr. E. W. Fisher :

Hand-Book for the Rhine, Baedeker, Coblenz, 1864.

From the "Leadenhall Press," London :

The Opening of China, by A. R. Colquhoun, London, n. d.

From J. C. Brauner :

Rock Inscriptions in Brazil.

From the Uaion Defence Committee, New York :

Minutes, Reports, and Correspondence ; with an Historical Introduction by John Austin Stevens, New York, 1885.

From Justus Perthes, Gotha :

Justus Perthes in Gotha, 1785–1885, Gotha, 1885.

From the St. Nicholas Society, New York :

Record of the Semi-Centennial Anniversary of the St. Nicholas Society, February 28, 1885, New York.

From Joseph Francis :

History of Life-Saving Appliances, New York, 1885.

From C. G. Congdon :

Atlas of Ancient Geography, by Samuel Butler, London, 1826.

PART I.

TRANSACTIONS

OF THE

SOCIETY FOR THE YEAR 1885.

TRANSACTIONS OF THE SOCIETY FOR 1885.

Annual meeting held at Chickering Hall, on the evening of Jan. 13th.

Chief-Justice DALY in the chair.

On motion, it was voted to dispense with the reading of the minutes of the last meeting.

The following Fellows of the Society were elected :

Simon W. Glazier, Walter Hubbard, Joseph Keane, Andrew G. Agnew, Horatio S. Brown.

Messrs. Gilliodts Van Severen, of Bruges, Belgium, and Harrison J. Brownlee, of Brandon, Manitoba, were elected Corresponding Members.

The annual report of the Treasurer, Mr. George Cabot Ward, was read, showing a cash balance to the credit of the general fund of $264.95, and to the credit of the permanent fund one of $5,601.36.

The report was accepted and ordered to be placed on file.

The annual report of the Council was then presented and read, as follows :

New York, Jan. 12, 1885. Since the last annual report six regular and two special meetings of the Society, and seven stated and five special meetings of the Council, have been held. At the annual meeting, held Tuesday evening, Jan. 8, 1884, the Rev. C. C. Tiffany, D.D., delivered a lecture entitled : "Norway and the Midnight Sun."

On January 24th, Mr. Edward L. Wilson, of Philadelphia, delivered a lecture entitled : "Exploration of Petra, Arabia."

On February 18th, Mr. Albert G. Browne, Jr., read a lecture on "The Growing Power of Chile in the Pacific."

On March 31st, Chief-Justice Daly, President, delivered the annual address on "Recent Developments in Central Africa and the Valley of the Congo."

On April 25th, Gen. James Grant Wilson delivered a lecture entitled: "Memorials and Footprints of Columbus."

On November 10th, Lieut. Shufeldt, U. S. N., delivered a lecture entitled: "Madagaskara, the Land of Sindbad the Sailor."

On November 21st, a special meeting was held for the reception of Lieut. A. W. Greely and his surviving companions in the exploration of the Arctic.

Addresses were made by Chief-Justice Daly, Lieut. Greely, Rev. Roswell D. Hitchcock, D.D., Gen. Egbert L. Viele, and Prof. Theodore W. Dwight.

On December 12th, Lieut. Frederick Schwatka, U. S. Army, delivered a lecture entitled: "Alaska and Exploration along the Yukon River."

All of the lectures were illustrated with stereopticon views.

The annual report of the Treasurer, Mr. George Cabot Ward, shows a balance in the general fund of $264.95, and balance in the permanent fund $5,601.36.

The publications of the Society have been regularly distributed to its Fellows and correspondents.

These publications are in great demand.

The Library and Map-Rooms of the Society have been enriched by many very valuable publications.

The additions for the year amount to 843, including books, maps, charts, and atlases.

The State Survey, which owes its existence to the initiative of the Society, has continued its labors during the year, making good progress and affording satisfactory results.

WILLIAM REMSEN,
Chairman of Council.

The Committee on Nominations presented the following report:

To the American Geographical Society:

The Nominating Committee appointed to select officers to fill vacancies, under resolution of the Society, passed at its meeting Dec. 12, 1884, respectfully report the selection of the following

nominees for election in accordance with Chapter V., Section 2, of the By-Laws:

For President—Charles P. Daly, LL.D., term to expire January, 1886.

For Vice-President—George W. Cullum, U. S. Army, term to expire January, 1888.

For Foreign Corresponding Secretary—J. Carson Brevoort, Esq., term to expire January, 1888.

For Treasurer — George Cabot Ward, Esq., term to expire January, 1886.

For Councillors—W. H. H. Moore, Isaac Bernheimer, D. O. Mills, Paul B. Du Chaillu, Charles H. Baldwin, terms to expire January, 1888.

HENRY W. DUNSHEE, *Chairman.*
JOHN MAC MULLEN,
JOHN D. JONES,
Nominating Committee.

NEW YORK, January 7, 1885.

On motion, the report was adopted, and the Society proceeded to a ballot, which resulted in the unanimous election of the nominees.

The President then introduced to the meeting Prof. F. H. Cushing, of the Smithsonian Institution, who delivered part of an address entitled: "The Discovery of Zuñi; or, The Ancient Provinces of Cibola and the Seven Lost Cities."

Prof. Cushing gave a very curious and interesting account of these Indians, among whom he had lived for several years, learning their language and studying their customs; but, while yet in the middle of his subject, he was seen to turn very pale and his utterance, becoming indistinct, all at once failed. A physician present hastened to his aid and removed him from the hall. Judge Daly then took up the lecturer's manuscript and pursued the reading for a half hour, when Prof. Cushing returned, entirely recovered from the attack of vertigo, and finished his address with great animation, to the instruction and gratification of the meeting. The illustrations by the stereopticon were effective.

Thanks were voted to the speaker, and, on motion, the Society adjourned.

Meeting of February 26th, held at Chickering Hall.

Chief-Justice DALY in the chair.

It was voted, on motion, to dispense with the reading of the minutes of the last meeting.

The following were elected Fellows of the Society :

J. H. Hewson, W. H. Granberry, Wm. H. Lane, A. D. Juilliard, Frank M. Freeman, Wallace D. Barkley, Albert Storer, Wm. Henry Rudkin, Wm. Lanman Bull, D. E. Mackenzie, Rev. C. C. Tiffany, Rudolph Keppler, Robbins Little, T. Wolfe Tone, Chas. S. Horner, Jr., J. R. Quinby, Wm. C. Church, Saml. T. Knapp, Jr., Elias L. Frank, Fredk. N. Lawrence, Henry C. Valentine, William Runkle, Ed. B. Merrill, Geo. S. Morison, A. Rouffignac, Ovide Dupré (Life).

The President then introduced Mr. David Dudley Field, who read a paper on "The Nomenclature of Cities and Towns in the United States." Mr. Field took the ground that there was a lack of fitness and significance in the names common in this country; and he advocated a return to the native names and the substitution of the original "Manhattan" for "New York."

The thanks of the meeting were voted to the speaker, and he was requested to furnish a copy of his paper for publication.

On motion, the Society adjourned.

Meeting of March 19th, held at Chickering Hall.

Chief-Justice DALY in the chair.

The reading of the minutes of the last meeting was, on motion, dispensed with.

The President introduced the speaker of the evening, Mr. Ernest Ingersoll, who delivered an interesting lecture entitled: "How the Settlement of North America has Affected its Wild Animals."

The thanks of the meeting were voted to the lecturer, and a copy of his paper was requested for publication.

Mr. Elial F. Hall offered resolutions urging upon the Legislature the purchase of lands for the proposed Niagara Park.

The resolutions were adopted as the sense of the Society.

On motion, the Society adjourned.

Meeting of April 11th, held at Chickering Hall.

Chief-Justice DALY in the chair.

The reading of the minutes of the last meeting was, on motion, dispensed with.

The following Fellows were elected:

Wm. Henry Post (Life), George Bowland.

Capt. Bedford Pim, R.N., was elected a Corresponding Member.

Judge Daly then introduced to the meeting ex-Gov. John W. Hoyt, of Wyoming, who delivered a lecture, illustrated by stereopticon views, on "Wyoming: Its Resources and Wonders."

The thanks of the Society were voted to the speaker, and a motion to adjourn was then carried.

Meeting of May 28th, held at Chickering Hall.

Chief-Justice DALY in the chair.

It was voted, on motion, to dispense with the reading of the minutes of the last meeting.

The following Fellows were elected:

J. Federico Elmore, Russell Sturgis, Frank F. Barnard, George A. Parker, Julius Sachs.

Judge Daly then introduced to the meeting the Hon. Eugene Schuyler, who delivered a lecture on "The Turcomans and the Russian Advance."

A vote of thanks to the lecturer was passed, and the Society, on motion, adjourned.

Meeting of November 13th, held at Chickering Hall.

Chief-Justice DALY in the chair.

On motion, it was voted to dispense with the reading of the minutes of the last meeting.

The following Fellows were elected:

George R. Gibson, Wm. T. Innes, Geo. Francis Nelson, George T. Bliss, Wm. R. Schmelzel, Edward S. Dakin, J. R. Planten, Geo. G. De Witt, Jr., E. S. Auchincloss, N. D. C. Hodges, Henry L. Slote, S. Franklin Stanton, Walton Storm, Lawrence Turnner, Robt. W. Burnet, C. E. Cady, C. H. Adams, Chas. E. Pell, J. L. Halsey, Saml. E. Fairfield.

Judge Daly then introduced the speaker of the evening, Mr. William Bradford, who read a paper on "Life and Scenery in the Far North," illustrated with views from sketches and paintings by the lecturer.

At the close of the lecture a vote of thanks to the speaker was passed, and the Society, on motion, adjourned.

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PART II.

PAPERS READ

BEFORE

THE SOCIETY DURING 1885.

Note.—THE AUTHORS ALONE ARE RESPONSIBLE FOR THE CONTENTS OF THEIR RESPECTIVE PAPERS.

ON THE NOMENCLATURE OF CITIES AND TOWNS IN THE UNITED STATES.

BY

DAVID DUDLEY FIELD.

We passed, last summer, through a season of College Commencements. Each had its score of orators, all intent on finding subjects interesting to their hearers, but it is not probable that one of them thought of stooping to a subject so trivial in their eyes as the names of places around them. And yet these were not really trivial matters. We have much to say of the fitness of names to the things in general; why not, then, the fitness of names to the things named? For my part, thinking the subject one of consequence, of much consequence indeed, I have taken it for this lecture.

Geographical nomenclature is within the scope of this Society. To describe the surface of the earth in all its divisions, call them by their names and penetrate into their recesses, are objects which you propose to yourselves. The fitness of these names to the places they purport to represent must therefore be pertinent to your studies.

A great wrong was done to Columbus in giving to the New World which he discovered a name not his, but that of another Italian, his follower. In a vain endeavor to right this wrong the two names have become strangely interchanged and misapplied. We, of this country, are embarrassed by the confusion which follows their use in two different senses. We call our country America, and ourselves Americans, but we sing "Hail Columbia" as our national song, while

British Columbia flanks us on the northwest and the United States of Colombia face us from the Isthmus of Darien. We visit Niagara and cross from the American to the Canadian side of the great cataract. If we pass beyond the equator, we find a group of republics, all calling themselves American. An enterprising countryman proposes to build a railway from the northmost to the southmost countries of this hemisphere, and to call it the Three Americas Railway. I make my boast that I am an American, as the Roman boasted that he was a Roman citizen, when the words were potent from one end of the earth to the other, but the Brazilians and the Peruvians claim also to be Americans, and the claim cannot be denied. Our fair countrywomen, whose bright faces are seen so often in the streets of Paris and among the monuments of Rome, never think of calling themselves by any other name than American, forgetting that the same belongs also to the matrons of Venezuela and the daughters of Chili. Whether there be now any remedy for these inconveniences I will not undertake to say, but I wish that this Society, which has earned its title to the highest respect among geographers everywhere, would study the subject and give us the fruit of its studies. The moderns, unlike the ancients, seem to have a passion for misnomer. Why else should the great island of the Eastern sea, greatest of all islands, be called New Guinea instead of Papua, or that English island, which pushes its green shores far down towards the Antarctic, be baptized New Zealand instead of Maoria, or worse still, the oldest province of Australia burden itself with the unspeakable name of New South Wales, which by natural sequence would make its people New-South-Walers!

Our happiness depends a great deal upon the places in which we live, and the pleasure or pain they give is affected by the names we know them by. We are told that Hood went to a school kept by two maiden sisters named Hogsflesh. They had a brother who would be addressed only as Mr. H. He was right. Yet one would as soon receive a letter addressed to him as *Hogsflesh*, as one addressed to him in *Hogspen*. But even this is not the worst of all possible names for there is a town in Arizona named *Tombstone*. Worse still are such names as these, which I take from a railway list of towns in the United States: You Bet, Pop Corn, Wild Cat, Cub Run, Cut Shin, Bake Oven, Big Coon, Burn Corn, Rawhide, Toad Vine, Black Jack, Skunk Lake, Buzzard Roost, Cat Creek, Dirt Town, Doctor Town, Jug Tavern, Sawdust, Big Fort, Fish Hook, Big John, Cowskin, Cut Off, and so on, a disgusting array of names, which, if we did not know better, we should think could come only from a semi-barbarous people.

Milton, describing the fabric raised by the fallen angels, exclaimed that:

> "Not Babylon,
> Nor Great Alcairo, such magnificence
> Equall'd in all their glories, to enshrine
> Belus or Serapis their gods, or seat
> Their Kings, when Egypt with Assyria strove
> In wealth and luxury."

What would he have said had he been told that, on the other side of the sea, the name of the Assyrian capital would one day be assumed by a straggling Long Island village, or that a new settlement on a low tongue of mud thrust out between the Ohio and the Mississippi would be named after the seat of Egyptian Kings? And, as if to

lose nothing grandiloquent from the land of Egypt, a Memphis has been established three hundred miles below. Who, looking upon it, would ever ask another looker-on if it did not remind him of "Busiris and his Memphian chivalry."

Let us come nearer home, and look at the map of New York. On the shore of a lake famed for its beauty, the State had once an agricultural school and has now an asylum. The place enchants you. You ask its name? Ovid. You are disenchanted. At the head of another lake lies a pretty village, the seat of a university. Nothing can exceed the beauty of the landscape; stretching to the north till the glance of the lake meets the blue of the sky on the far-off horizon, and on either side the land binding the the water with a rim of emerald; hill and meadow, cape and bay blending in one picture never to be forgotten. By what freak of idiocy was there misplaced upon this inland settlement, hundreds of miles from the sea, a name which for forty centuries had been associated in the minds of men with the immortal song of Homer, the island-kingdom of Ulysses, and the fortunes of Penelope and Telemachus! We may admire, as indeed we must, the beauty of the landscape; we may honor, as we surely will, the university whose doors are open for man and woman alike, but the misnomer will intrude into our thoughts, do what we will. The teachers and scholars of this century, for the faults of the last, are obliged to stamp upon the letters they write, the reports they make, the books they publish—ITHACA!

The traveler on his way from New York to Niagara passes three greatly prospering but grievously misnamed cities, Troy, Utica and Syracuse. There were Indian names enough

at hand, sprung from the soil, spoken for ages by the aboriginal inhabitants, but they were cast aside for an alien nomenclature, which is as much out of place here as the sculptures of the Parthenon are out of place in a London museum. Who has not been moved by the pathos of Red Jacket exclaiming, that the tears fell from his eyes "as the drops of rain fall from the tops of the trees of Oneida." Substitute Utica for Oneida in this passage and see how it loses its poetic charm. It is poor compensation that Oneida and Onondaga have been taken for the names of counties instead of the fair cities to which they of right belong. For the former they are spoken and written as occasion serves, few times a day perhaps; for the latter they would be spoken and written every minute of the waking hours.

Central New York was a military tract, that is, a tract set apart for bounties to soldiers, and the tradition is that a pedantic surveyor-general of the last century took ancient names, at random, out of a classical dictionary to scatter broadcast over this new land. That may not be surprising, but it is surprising that they are retained by the citizens of this generation, by men of letters and taste, scholars and enthusiasts, and so much the more as this central region has universities, colleges and academies not a few, some of which might perhaps withdraw their attention, for a while, from more ambitious tasks to the humbler one of plucking these thorns and thistles from their own soil.

Let us look at the names, or some of them, in a group: Aurelius, Athens, Arcadia, Attica, Brutus, Babylon, Cairo, Carthage. Corinth, Cato, Cicero, Camillus, Diana, Fabius, Greece, Hannibal, Homer, Ithaca, Ilion, Italy, Jerusalem, Lysander, Minerva, Milo, Marcellus, Marathon, Manlius,

XUM

Ovid, Pompey, Pharsalia, Palmyra, Romulus, Rome, Scipio, Solon, Sparta, Syracuse, Scio, Smyrna, Sempronius, Tully, Tyre, Troy, Utica, Ulysses, Virgil. So much for the old surveyor-general and his old names. See what his modern imitators have added: Amsterdam, Berlin, Bombay, Cuba, Chili, Denmark, Dresden, Dryden, Dublin, Edinburgh, Florence, Genoa, Geneva, Java, Jamaica, Junius, Lima, Lodi, Madeira, Malta, Messina, Milan, Naples, Norway, Ossian, Palermo, Parma, Paris, Potsdam, Riga, Rotterdam, Russia, Salamanca, Stockholm, Sweden, Turin, Verona, Vienna, Volney, Warsaw, Wilna. But I am weary of the recital.

It would not be difficult to find an agreeable name for every place in the country. Though the number of post-offices amounts already to fifty thousand and the land is but half-filled, good names may be found for all. I would by no means follow the example of a late assistant post-master-general, who, it is said, bestowed his name, and it was not a very musical one at best, on hundreds of our post-offices. There is, to begin with, the large supply of Indian names. These should be restored, as many of them as possible, not merely because they are significant and musical, but because they would stand as memorials of the Indian races, so many of which have perished, while the rest are perishing day by day. The same famous Indian orator whose name I have just mentioned, at a Council held in Hartford, poured out his soul in this lament over the fortunes of his people:

"We stand, a small island in the bosom of the great waters. We are encircled—we are encompassed. The evil spirit rides upon the blast, and the waters are disturbed. They rise; they press upon us; and the waves once settled over us we disappear forever. Who, then, lives to mourn us? None.

What marks our extermination? Nothing. We are mingled with the common elements."

Is it not possible even now to restore, where they are all but lost, and to retain, where they yet remain, the names which this perishing people gave to their homes and hunting-grounds, their rivers and hills? What memorial more fit, or more enduring, outlasting brass or granite, than the words of their plaintive tongue, lingering forever upon the hill-tops, the valleys and the streams which they loved so well?

How musical most of their names were we know from those we have retained, as: Alabama, Algoma, Atamaha, Arizona, Cayuga, Dakota, Erie, Genesee, Huron, Horicon, Iowa, Idaho, Kanawha, Mississippi, Monongahela, Minnesota, Michigan, Milwaukee, Nebraska, Ontario, Pensacola, Santee, Saratoga, Saranac, Sonora, Susquehanna, Tacoma, Tennessee, Tuscarora, Wisconsin, Wyoming. The old names could be found in old histories, old geographies, old maps, town records, and even in novels like Cooper's. There is a curious memoir on names, read before our Historical Society in 1816, by Egbert Benson, which might be consulted with advantage. Village improvement societies are just the agencies for such work. Then a local object, mountain, valley, or river might suggest a name, as Capetown, Longmeadow, Cherry Valley. So might the name of a founder or prominent inhabitant be taken with an English termination, as Jamestown, Williamstown, Charlestown. But by all means avoid terminations that do not belong to our language. Banish "*ville*" altogether. It is not English, but French, and only French. It does not fit well with our names. Indeed, it disfigures whatever it touches,

making the good bad, and the bad worse. To use it is *vilification*. Whoever puts "ville" to a name in this country literally vilifies it. It is not merely wrong in itself, however used, but it is used in a wrong sense. It signifies city. We apply it mostly to insignificant villages. Let us be at least manly enough to use our own language, and use it in its true signification. If speculators in town lots think that calling a place a city will help them sell their lots to the unwary, let them use the next less awful affix, and do as has been done in respect of Jersey *City*, Long Island *City*, Michigan *City*—dreadful alternatives—or if a tavern keeper, in the midst of half-a-dozen houses, wishes to magnify his settlement by adding pretentious syllables to its name, let him do it outright, and call it Smith-village, instead of Smithville. That the distasteful affix of "*ville*," should be taken so often is a mortifying proof of bad taste, or poverty of invention, or of stolid indifference. The passion for it is almost a disease, and the instances of its disfigurement may be counted by thousands upon thousands. What could be more dreadful than McGrawville? I think I would go out of my way to avoid a place lying under the cloud of such a name. Our language is richer than the French, and it has words in plenty capable of being annexed as terminations to the names of persons or things. Thus: town, borough, field, ford, hill, vale, meadow, plain, can be made use of, some of them in two forms, as town or ton (Charlestown or Charleston), borough or burg (Goldsborough or Ogdensburg). Then we have the names of our own famous men which might be taken without an affix, as they have in so many instances been taken; for example, Washington, Jackson, Lincoln.

If the people of a neighborhood are able to find no name in an Indian dialect, if none is suggested by a local object, or a person of local prominence, they have at least the wide domain of invention. They can invent at will, and give names, which, however unmeaning, are at least musical. Elberon, at Long Branch, is an instance of happy invention working upon a local name. The owner of the site was Mr. L. B. Brown, out of which an inventive genius made Elberon, the sonorous name it now bears. Saltaire, in England, is an instance of two words well blended, Salt after Sir Titus Salt and Aire, the name of a river. What we want is a name pleasant to hear. Generally, as we have said, we can find one that has a meaning and sounds well, but when that is impossible we can invent one which, if it has no meaning, has at least an agreeable sound. Among natural objects, the trees alone would furnish a considerable supply, as, for example, the Linden, out of which could be made Overlinden, Underlinden, Bylinden, Lindenfield, Lindenfeld, Lindenhill, Lindengrove, Lindenburg, Lindenbank, Lindenside. Or an Indian name could be varied by different terminations, as from Oneida Oneidaland and so on. Out of Genesee, Geneseo was made. But in the dearth of all else, invent a name out and out.

Far better this than to borrow from the Old World. Better take any mellifluous syllables and put them together, than plant Sempronious or Pompey in the green valleys of America. From a few euphonious syllables an endless combination might be made, as any one will see who will take the trouble to try; for example, out of the five names, Altamaha, Cayuga, Monongahela, Susquehanna and Pensacola, which have between them twenty syllables, a combi-

nation in their possible varieties would furnish a storehouse of names, as Altama, Altayuga, Altahela, Cayuhela, and so on.

Can the uncouth and uncongenial names which disfigure the map and set the face awry be gotten rid of? Why not? It needs but the will, the way is easy enough. In this State we have already a statute authorizing supervisors to divide a town and make new ones. Why not enlarge this statute so as to authorize the voters of a town to change its name with the consent of the county supervisors, taking care that the same name should not be bestowed on two different places. Other countries have made changes greater than any we may wish to make, and we surely can do as much as they. Names that were fastened for generations upon countries and cities have been changed. Byzantium gave way to Constantinople. Ancient and modern geography seem hardly to describe the same world. Compare a map of Europe in the time of Cæsar with another in the time of Napoleon. The maps of modern Europe are remade almost as often as every quarter of a century. Roll it up, it is of no more use, said Pitt, looking at a map of Italy after the battle of Marengo. Poland has been contracted, extended, blotted out, replaced, and blotted out again. The Batavian, Helvetic, and Cisalpine Republics were constructed, and in a few years fell to pieces. The kingdom of Westphalia appeared for a while in the list of continental states and vanished. Within the last forty years a new kingdom has arisen at the mouth of the Rhine, and retaken the old name of Belgium. The maps of Europe that we studied in boyhood made the Don its eastern boundary; under the influence of Russian geographers, the limit has been pushed

eastward to the Volga, and a vast tract separated from Asia. It is not fifty years since the continent which borders the Indian ocean eastward was known as New Holland. It is now Australia. Van Dieman's Land is Tasmania. A new nomenclature has been adopted for the islands of the great South sea; Otaheite and Owyhee have disappeared from the maps and Tahiti and Hawaii been written in their places. On our side of the ocean the peninsula next east of us was once Acadia. After it fell into the dominion of the English it was granted to Sir William Alexander, a Scotchman, and received a new baptism by the name of Nova Scotia. Upper Canada has become Ontario. Little York is now Toronto. We are about to change the territory of Washington into the State of Tacoma. Would that we could change New Mexico to Sonora, and New York to Manhattan.

What a name is New York for this queen of Western cities? Compare it with that which the Indian gave the island, barbarian as we call him, Manhattan or Manahatta. Who for its euphony and its significance would not wish the old name back again? Who, that cares for such things, does not grieve over the incongruity of the present name with the place? Old York and New York are as unlike as possible; one a small inland city, the other the seaport of half the world. As the voyager comes in from the sea, beholding the amplitude of the haven, the beauty of the islands, the richness and variety of the shores, the two rivers which clasp the island city with a rushing of great waters; the buildings, and the ships; the great bridge hanging in the air above them all, looking from below like an arch of gossamer, but above trodden on its solid floors

as if it were part of the enduring earth, and withal the abounding and exultant life that animates the scene, he is ready to exclaim: "Oh thou that art situate at the entry of the sea, which art a merchant of the people unto many isles; thy borders are in the midst of the seas; thy builders have perfected thy beauty." One thing only is wanting to the completeness of the picture; the crown of a fitting name on the head of the imperial city. May we not hope that one day, when she joins hands with her sister city, as she surely will, she will retake the old and true name of the ever bright island of Manhattan.

It is not extravagant to say, that there is not another country on the face of the earth disfigured by so many inappropriate names as our own. England has English words of Saxon and Norman origin. Holland has those which are wholly Dutch. France has her own, handed down from the Franks. In Italy and Spain the names are partly Roman and partly the gifts of invaders. Germany and Switzerland have names which are histories. Denmark and Sweden owe theirs—soft and musical they are—to the Goths and Vandals. And Russia, Poland and Bohemia, harsh as many of them appear to us, have at least those which are significant to the Sclavonic races. But here what an admixture of Greek and Roman, English, French, Italian, Sclavonic and Gothic—a piebald map—a confused jumble of old and new; as if there were nothing original, nothing appropriate to the soil, nothing that distinguished the mass of human beings who have taken possession of these shores.

American literature, we do not for a moment doubt, has a future equal to the past of any country or age. Why should it not? We are the heirs of all the ages,

we have not degenerated in mind or body from the standard of our progenitors, and we have been placed by Providence in as fair a domain as was ever vouchsafed to the children of men, in the Old World or the New. Behold, what a domain it is; scenery in innumerable forms of land and water, landscapes less finished but more varied than those of England, great lakes, inland seas as they are, storm-vexed Mediterraneans of the West, rivers rivaling the Nile, wide prairies swelling with harvests, or smiling with wild flowers as they lie waiting to be taken for the use of man, snowy ridges of the central mountains, Alps added to Alps, canyons dark and deep, through whose long abysses great rivers rush foaming to the sea, boundless forests, dim and lonely, save as they are trodden by wild beasts or wild men with cautious footsteps, trees of the forest older and taller than the cedars of Lebanon, the Yosemite and the Niagara, and over all a pure elastic atmosphere quickening the senses, widening the horizon, and lighting up the firmament with the flames of sunset or heightening the brightness of the Autumn woods.

Who, not wholly insensible to nature, can stand on a New England hill in the glow of an October noon, the blood bounding through his veins with the exhilarating air, while the clouds hang lazily along the horizon or move slowly across the sky, escorted by shadows from hill to valley and valley to hill, and the trees on the hillsides and the plains vie with one another in their robes of scarlet and green and gold, or perchance in the evening twilight, when the witchery of nature is greatest, in the full flush of the gloaming, while the colors of the rainbow suffuse the west and the air is soft and still—who can stand thus, sur-

rounded by autumnal glory, without feeling as much assured, as if a prophet foretold, that the highest poetry would yet vie with the highest art to portray this resplendent earth and sky. And what may happen here may happen elsewhere, until every bright or wild scene shall have its chronicle and song, and the whole land be as rich in its literature as in its cities and harvests, from the Peak of Katahdin to the fountains of Sonora.

Turn, then, from the place to the people. If we are not permitted to praise ourselves, we may nevertheless boast of our fathers and their deeds. Look into their annals from the earliest settlements to the times nearest our own, to find history surpass romance. Their first emigration hither was, not for gain nor for conquest, but for a sentiment, and sentiment has carried the country through all the great crises of its history. For a sentiment our fathers defied the arms of England and won their independence, for a sentiment they fought England again in 1812, and for a sentiment our last great war was fought, that Titanic struggle that shook the world. The first comers, pilgrims and colonists, passed through perils of the sea to meet perils of the wilderness, but they held their own, as an advance guard holds its ground until they who are to follow come on, and so our forefathers held their ground until others came, and the little band, swelling with time, became a host and moved on from valley to valley and river to river, until at last they and their sons, and their sons' sons, subdued the land, built goodly homes, established commonwealths, and scattered their enemies from the rivers of Florida to the plains of Abraham. They were not all from the same stock. The predominant element was cer-

tainly English as the English were in the seventeenth century ; but there was also an admixture of Celtic, Teutonic and Frank. Though they had the common purpose of making a permanent establishment in the New World, there were strong contrasts of manners between the Puritans of New England, the Dutch Burghers of New York, the Quakers of Pennsylvania, the Lutherans of Delaware, the Catholics of Maryland, the cavaliers of Virginia, and the Huguenots of South Carolina. The varied lives and the brave deeds of these worthies so contrasted in manners, but so drawn together by the magnetic force of common dangers and common purposes, form the richest of materials for song and story. The wild tales of those earlier times were carried from fireside to fireside, and preserved in many a legend. When the Colonies became States and the States became a nation, though there followed a blending of manners, the same spirit remained, the same strength of arm and the same power of will. These elements and these circumstances have developed traits of character which must affect the literature, as they affect the life of a people, fertility of invention, love of adventure, daring that does not hesitate and hardihood that never gives up, joined to a peculiar humor and an ever active imagination.

Behold now thirty-eight commonwealths resting in peace after the storms of war, peopling the land acre by acre with each recurring day, building cities and pouring into the lap of plenty harvests such as were never before gathered by the hands of men. These influences, the stories of the past and the promises of the future, in the scenes we have described, will serve to create and fashion a literature of the land. We have already given an earnest of what we

can do. Irving, Cooper, Bancroft, Motley, Prescott, Longfellow, Bryant, Whittier, Emerson, Hawthorne, Lowell, Holmes, are harbingers of a greater day to come. Let us hope that, in the cultivation of a taste for letters and the arts, a subject so little considered as that we have been discussing may not be lost sight of, but that our own beloved land, the land of so many memories and so many hopes, may not only bind our hearts to her by the love of country and the love of home, but make the homes all the sweeter for the association of pleasant names with pleasant places.

HOW THE SETTLEMENT OF NORTH AMERICA HAS AFFECTED ITS WILD ANIMALS.

BY

ERNEST INGERSOLL.

Three centuries have now passed since the first coming of Europeans to remain permanently on the soil of the New World. It is apparent to you how great a change has been wrought since that time in the face of the continent. In place of a scattered and chiefly nomadic humanity, who had reclaimed only small spots, here and there, from the wilderness, are now settled sixty or seventy millions of active and conquering aliens.

In place of simple footpaths, men travel noisily along a network of railroads and highways. Thousands of square miles of forest have been cleared, marshes have been drained, rivers obstructed and tormented with mill-wheels, and cities have sprung up as swiftly as a second-growth of scrub-oaks follows the leveling of a pine wood. In almost every part of the continent human structures and interference have replaced the simplicity, and interrupted the course, of nature.

To say that all this has produced a marked effect upon the animal life of the continent, may seem too much of a truism to be worth discussion. Yet the degree to which this effect has been felt, and the various ways in which man's influence has been exerted upon animals, may still be objects of interesting inquiry. I confine myself alone to the effects produced by the white man, because the Indian seems to have caused hardly an appreciable change, either

for good or evil, in the comparative plenitude, or in the habits, of the creatures dwelling about him. He himself was really as wild and indigenous as they, hunting, like the carnivores, purely for food, and, with the osprey, fishing only when his wants were urgent; his mind rarely entertained the idea of pursuing animals for sport, and his civilization was too limited to cause much disturbance of natural conditions. Moreover, it is certain that the Indians often exercised an intelligent and prudent self-restraint in this matter, recognizing that a wanton destruction of the game-animals would mean famine. Probably the most frequent cause of war among the red men, in pre-historic times, was the encroachment of one tribe or band upon the well-recognized hunting preserves of a neighboring band or tribe. Had this continent remained in possession of the primitive races up to the present time, it is probable, therefore, that its fauna and flora would have remained unchanged, so far as human influence was concerned.

Following, for the sake of ease and clearness, the customary division of animal life into mammals, birds, reptiles, fishes and the almost countless invertebrates, let me cite a few examples to show how, in each class, civilization has worked visible changes in the fauna of the United States. First, and most prominent, stand the quadrupeds —"the beasts of the field," as Scripture terms them. These were the first to feel the effect of the new masters of the land. The need of their flesh as food; the utility of their skins and fur in the making of clothing, ornaments and equipments; or the peril to human life coming from the ferocity natural to the predatory kinds, were all powerful motives leading white men to kill off the larger quadrupeds with great rapidity. Says a witty historian of

the Pilgrims to New England, "First they fell upon their knees, and then—they fell upon the Indians!" He might have added: "and the game."

This destruction, however, seems mainly to have been the work of English, Dutch and French colonists. The Spanish conquerors in the Southwest did little hunting. They were soldiers, not settlers. They had no necessity for furs, cared nothing for trade in them, needed little game as food, since they were in a region where fruit was plentiful, fishes swarmed in the streams, and where the natives were agriculturists of no mean degree. The wave of faunal desolation, therefore, proceeded inland from the northern Atlantic coast, and its progress began to be manifest at a very early day.

When the Pilgrims came to New England, for example, not only did the common deer crowd all the glades of the woods, but every winter, even as far south as Connecticut, were to be seen the caribou and the moose, both of which long ago were pressed back into the forests along the border of New Brunswick and Quebec. Thomas Morton, who wrote in 1632, relates that deer were so plentiful at that day in eastern Massachusetts that sometimes a hundred might be aroused within the compass of a mile.

In Virginia, according to Strachey, droves of one or two hundred were frequently seen by the first settlers. The writings of early colonial reporters unite in testifying that deer thronged everywhere along the Atlantic seaboard in almost incredible numbers; and that similar herds were encountered in the prairie states, when the first explorers had crossed the mountains or had penetrated into the northwest by way of the great lakes.

To-day, a few northernmost forests in New England; in

New York, the wilderness of the Adirondacks ; and, in the middle states, only the fastnesses of Alleghanian ranges, shelter remnants of these ancient multitudes ; while, even in the west, no deer can be had south of Canada, save here and there a few in the roughest and most sparsely-settled districts ; and they are fast disappearing even from the Rockies. Careful statistics showed that a hundred thousand deer were killed in Michigan alone during 1880 and 1881.

A still more striking example of the waste of cervine life is furnished by the history of the elk, or *wapiti*, as it is more properly named.

Few persons are aware, perhaps, that, until white men came, this noble stag was a denizen of our eastern forests, as far, at least, at the eastern foot-hills of the Blue Ridge ; while, in the north, he extended his wanderings far down the St. Lawrence, and even to the shores of Hudson's bay. As one bit of evidence that this was the case, I may refer you to the journal of Father Simon Le Moine. This missionary says that during his journey into Canada, in 1653, he met with herds of elk and deer near where Montreal now stands ; and so unsuspicious were these animals that many were killed by his party "for amusement," with no better weapons than axes. Strange amusement that for the followers of a Christian preacher, carrying the gospel of mercy and love to benighted men ! Not to speak of its lesson in cruelty, what a barrier such an inconsiderate waste of native resources must have set up between the Indians and their visitors, before the priest had once opened his book, or had begun to proclaim his mission of peace and benevolence ! No wonder missionary enterprises toward an uncivilized people have so often proved unsuccessful,

when their first act was the commission of some barbarity like this, in defiance of all primitive notions of propriety. Yet clergymen and missionaries of all denominations are still found among "sportsmen," and delight in vacation hours to take the lives of innocent creatures merely because it stirs their blood into stronger excitement and increases their vanity in skillful marksmenship.

Loving retired and mountainous districts, the elk resisted extermination for a long time in hilly regions. Godman tells us that a few still lingered in Pennsylvania as late as 1835; and at the same date Dr. Kirtland gave Ashtabula County as sheltering another band in Ohio, whence they had generally been driven before the beginning of the present century. A correspondent of the New York *Tribune*, last year wrote that, in 1856 and '7, several elks were killed, or captured, in the wilderness along the upper Susquehanna; while one survived as late as 1864.

It is symptomatic of the half-civilized condition in which the great majority of the human race is sunken, that the moment it is whispered that a rare, but harmless and interesting animal, has managed to elude dogs and guns, and is still abroad in the uplands, a crowd of men straightway move heaven and earth to kill it. Having achieved this manly feat, and turned into insensate venison the lordly animal whose struggle for life was bravely sustained against so heavy odds, then will these same men expend labor and money to visit a menagerie for the sake of seeing some apathetic specimen of the very same deer standing tamely on exhibition—how different from the vigor and *verve* of the wild stag on his native hillside! Yet if this poor captive were turned loose, in an instant dogs and guns would be hurried out to kill it, too.

It would seem to an unprejudiced mind that our vaunted civilization was wofully thin in some spots!

Seeking refuge beyond the Mississippi from continuous hounding, the wapiti were followed thither as soon as the railways began to push toward the plains. By 1874 it was difficult to find one even in central Colorado. In 1877 I saw thousands on the plains of the upper Sweetwater, and in the Wind River mountains. But now they have become scarce and wary there; and practically are used up in the southern Rocky mountains, the plateaus and bad lands of the northern corner of Colorado affording the last refuge to the persecuted race.

The sad decrease of the buffalo, or bison, is well known to you. No quadruped has been so ruthlessly sacrificed as this. During the early part of the seventeenth century, the bison ranged in ample herds over nearly the whole country between the Alleghany mountains and the Mississippi river. Their retreat westward is a story of sickening and utterly uncalled-for slaughter. Only twenty-five years ago the great plains were covered with them. It is perfectly true that when the Kansas Pacific and the Union Pacific railroads were new, trains were compelled to stop by buffaloes getting on the track in countless numbers. I myself have seen steamboats halted on the upper Missouri by swimming bands of these finest of wild cattle. Now, a remnant in the borders of Texas and New Mexico, a few in the Bighorn and Judith River regions of the northwest, and an occasional straggler down Milk river are all that remain within an accessible distance. The extension of the Northern Pacific and Canadian Pacific railways has been the latest agent in the extermination of the bison throughout all this upper Missouri and Saskatchewan region.

The black-tailed deer and the antelope are sharing its fate, though these do not leave the country *en masse*, as has the timid and gregarious bison.

By the rapid disappearance of these three animals, whose flesh and skins were both of vital importance to the aborigines of the west, many a tribe has suddenly found itself face to face with famine, for the rations given them by the government were apportioned upon the theory that the red men would derive the bulk of their subsistence from the game, and were totally insufficient in the unexpected failure of this resource. Forced by famine to leave the reservation in order to follow the bison and deer to the remote pastures whither they had been driven by the encroachment of settlers, and the pursuit of ruthless hide-hunters or merciless sportsmen, the Indian subjects himself to military chase and arrest. Stung by the cruelty and injustice of it; unable to appreciate the drift of events; feeling that he has no alternative between starvation and the bayonet, he chooses the nobler alternative and fights.

This is not the history of all Indian wars, but it has been the cause of many a one of late, to my personal knowledge; and it adds a woful item to the list of reactions which follow the pressure of civilization upon our wild animals.

The extinction by human occupation of the herbivorous quadrupeds, in a new district, together with many of lesser rank, would inevitably starve out the beasts of prey, in addition to which they must face the active antagonism of man. Under this double adversity they have faded away with startling rapidity, only the quietest and cleverest surviving at all in the East. A scattered remnant of bears is still harbored by the thick woods and broken rocks of the Catskills and Adirondacks, and along the heights of the

West Virginian, Great Smoky and Cumberland mountains. The lynx is heard of now and then; a panther, with still greater rarity, east of the Rockies, while the great gray wolf of the forest has disappeared altogether south of Lake Superior and the Canadian backwoods. Yet in the early part of the seventeenth century so numerous and obnoxious were all these forest-prowling beasts of prey, ravaging the barnyard and sheepfold, and even making travelling sometimes perilous for human kind, that premiums were offered in each local government for their destruction—a practice sustained until the present time in some frontier communities.

In the Mississippi valley, besides the large wolf of the timber land, the small prairie wolf or coyote was once plentiful; but both have been shot and poisoned with unremitting diligence by the settlers whose flocks they preyed upon, until both have been exterminated over most of the region this side of the Missouri river. The same is true of the coast pastures of California and the ranching belt along the eastern slopes of the Rockies.

The wolf, however, makes a hard fight against destiny. His resources are varied and his ingenuity, pluck and endurance adequate to overcome a wide range of adversities. It is scarcely two hundred years since the last wild wolf was killed in Scotland. In France they were dangerously abundant at the beginning of the present century, thriving on the desolation of her incessant wars, until a general riddance was resolved upon by the government, systematic measures adopted and their numbers greatly reduced. The wilder parts of France and Germany still harbor isolated packs, and in Russia wolves are nowhere uncommon.

In getting rid of wolves, however, the difficulties of raising sheep were only partly overcome; for so numerous have worthless dogs become that in many large districts—the State of Connecticut for example,—sheep-raising is impracticable, though no other obstacle stands in the way.

Early in the history of our country public rewards were decreed for the heads of foxes, raccoons, minks, skunks and even squirrels; and it is astonishing to read the statistics of the numbers of these smaller animals killed during the last two centuries along the northern Atlantic coast—a slaughter wholly uncalled for in my opinion.

The first beginning of industry and wealth in the United States (or at any rate, in this metropolitan part of it) was made in the fur trade; and for almost three centuries we have been waging a ceaseless war against our fur-bearing quadrupeds for the sake of their peltries, the exports of which from Canada alone, a hundred years ago, amounted to a million dollars' worth annually.*

The mink, weasel, skunk, fox and some other fur-bearers are still to be counted among our woodland mammals. The muskrat, adapting himself with quick ingenuity to the canals, ditches and artificial water-ways, finds his opportunities for home-making much enlarged, while his natural enemies are diminished, and his food supply is little interfered with. Not only can he hold his own, therefore, but in many districts will increase in numbers, despite the trappers and the enmity of fish-culturists.

* According to statistics summarized in *Der Zoologische Garten*, 1869, the Hudson's Bay Company sold at auction, in London, besides many million other American pelts, the following of the single family *Mustelidæ* alone: Of sables, 1,240,511 skins; of otters, 674,027; wolverenes, 68,694; minks, 1,507,240; skunks, 218,653; badgers, 275,302; sea-otters, 5,349. Another company, the Canadian, during the first half of that century (1763–1839) sold in London, of American pelts, 2,931,383 sables, 29,110 wolverenes, 895,832 otters, 1,080,780 minks.

But the fur-bearers most valuable to us, such as the beaver and the otter, have been all but extirpated from the whole breadth of the United States and eastern Canada. The few that persist are isolated and extremely rare, though both animals were once workers in almost every stream in the Union. How quickly they would return, if left to themselves, was shown by the fact that in the mountains of southwestern Virginia and Kentucky great numbers of beavers reinstated themselves and bred during the absence of the men of that region in the Confederate army.

Perhaps no living thing is without enemies, but highlanders, as a class, have fewer than lowlanders. Though they now find in man their most serious foe, two highlanders belonging to the American fauna are more likely to withstand him than any other quadrupeds I know of whose flesh is edible. These are the wild sheep and the wild goat of the far northwest, whose home is twelve or thirteen thousand feet above the sea. "Their feeding-grounds are among the most beautiful of the wild gardens, bright with daisies and gentians, and mats of purple bryanthus, hidden away on rocky headlands and canon-sides, where sunshine is abundant and the outlook to a horizon hundreds of miles away."

In the more accessible ranges many have been shot, and the sheep are far less numerous than formerly. But the rare mountain goat clings to the remotest peaks and most unclimbable ridges of the Cascades, and to get one calls for courage and exertion, the exhibition of which would make the feat a glorious exploit, were the end obtained, a more worthy one. All lovers of wildness will rejoice with me in the rocky security of its snow-bound castles.

Relieved by an occasional exception, such as this of the glacier-loving goats and that of the indomitable muskrat, the melancholy record of swift diminution during the past century or two goes through nearly the whole list of American mammalia.

Even squirrels, hares, porcupines, field-mice, and such small deer, have been greatly reduced as a whole, though in limited areas and under favorable conditions some of these species flourish in abnormal numbers, because of the reduction of their natural enemies, and the increase of food. The gophers, ground squirrels and prairie dogs succumb to agriculture, and melt away before man's advance. Small and great are falling under the Juggernaut of civilization!

Nor is this baleful disturbance in the natural order of animal life limited by the land alone. The monstrous mammalian animals whose home is in the sea were forced long ago to abandon many a feeding-ground and nursery. When Cartier and the early explorers first landed on our northern coast they found the walrus frequenting the shores from Cape Breton island northward to such an extent that whole fleets were constantly engaged in its capture, and it lingered in the Gulf of St. Lawrence until the close of the last century. Now none of these huge rosmari are to be seen this side of Baffin's bay, having deserted even lower Greenland. How scarce are the seals which used to disport in the surf and creep to rest upon islets, all along the coast southward to Cape May, is familiar to you. Robyn's reef, in New York harbor, took its old Dutch name from the fact that formerly the rocks exposed there formed a favorite resting-place for those pretty animals. Now one must go to Labrador if he would see seals in any quantity.

Even whales have been greatly lessened and must now be sought by the ships in the most remote polar waters, while the gigantic and awkward sea-cow, akin to our fast-failing Florida manatee, was totally annihilated 150 years ago by Russian fur-hunters in Alaska. Only the protective legislation enforced by a company financially interested in that distant corner of the world has preserved the valuable fur-seal and the richly-coated sea-otter from the fate which long ago swept away their relatives in antarctic islands. Could a similar course be adopted with the beaver and other valuable fur-bearers, whose pelts are now exceedingly expensive, they might be preserved to our use and made comparatively inexpensive forever.

Let us now turn to the birds.

In this class the white man's advent upon the western continent, and the influence of its civilization, have acted in two ways. While it has been detrimental to some birds, it has been beneficial to others.

The settlement of a country implies the felling of forests, the letting in upon the ground of light and warmth, the propagation of seed-bearing cereals, weeds and grasses enormously in excess of a natural state of things, the destruction of noxious quadrupeds and reptiles, and the introduction of horses and cattle. Each of these alterations of nature (except in some few cases, like that of the relation of the woodpecker to the cutting away of timber) is a direct benefit to the little birds. It is not difficult to demonstrate this.

Birds naturally choose sunny spots in which to build their nests, such as some little glade on the bank of a stream; when roads were cut and fields levelled in the midst of sombre woods, the area suitable for nesting was

of course greatly added to, and a better chance was thus afforded for successfully hatching and rearing broods of young. The way in which the wood-roads cut by the hemlock bark peelers through the dense forests that clothe the remote Catskills have become the haunt of birds and insects is a capital example in urging this point. One of the largest avian families—that of the sparrows, finches, and buntings—subsists almost exclusively on seeds of weeds and grasses; and the members of a large proportion of other families depend somewhat for their daily supply on this sort of food. Under the universal shade of trees weeds can grow only sparingly, and on prairies the crop is often killed by drought, or is burnt in the autumn; but the cultivation of immense fields of grain and hay, and the making of broad pastures and half-worn roads, which almost immediately become filled with weeds, has furnished the birds with an inexhaustible and unfailing harvest.

Birds suffer much harm from many quadrupeds—foxes, weasels, skunks, rats, etc.—which catch them on their roosts, suck their eggs, and kill their fledglings. Snakes also are fond of them, and destroy many nests every season —in early summer subsisting almost alone on eggs.

All these animals, particularly foxes, skunks and serpents, are greatly reduced in number by settlements, yet the harm they might have done is well compensated for by the introduction of domestic cats, which go foraging through the woods, to the grief of all their feathered inhabitants.

All small birds are more or less completely insectivorous (even the cone-billed seed-eaters having to feed their young with larvæ at first), and naturally they congregate where this food is most abundantly supplied. There would seem

to be enough anywhere; but the ploughing and manuring of the soil facilitates the growth and increase of such insects as go through their metamorphoses in the ground; and the culture of orchards furnishes an excellent resort for many boring and fruit-loving moths, beetles and the like, which find the best possible circumstances for their multiplication in the diseased trunks and juicy fruit of the apple, plum, cherry, and peach. No part of the farm has so many winged citizens as the orchard.

The presence of horses, cattle and sheep offers to flies and other insect tribes excellent opportunities for the safe rearing of their eggs in the dunghills and heaps of wet straw always lying about barns, and attracts a great colony of those minute beetles upon which the fly-catching birds principally maintain themselves. The cattle-yard, therefore, forms a sort of game-preserve for such birds, and many species flock thither. Swallows are hardly ever found except in the vicinity of barns; the cow-bunting receives its name from its habit of constantly associating with cattle; and the king-bird finds the stable-yard his most profitable hunting-ground. Near the habitations of men, small birds also enjoy protection from hawks and owls, which hesitate to venture away from the shelter of the woods, and whose numbers are reduced, unwisely I believe, on the whole, by incessant persecution.

The logic of the case is simple: birds will assemble chiefly where food for themselves and their young is in greatest abundance, and where they are least exposed to enemies. These two prime conditions of prosperity, with many favorable concomitants, man's art supplies to the insessorial birds, which, on the other hand, would suffer little direct injury from his contact, were it not for maraud-

ing boys, and adults who have never attained to manliness or forget it, in the wanton shooting and snaring of defenceless little creatures in whose beauty they profess to take delight.

Some species seem affected only to a trifling extent by the civilizing of the country, either in numbers or habits, while others increase rapidly on the first settlement of a region, and then decrease again. Of this class are the prairie chicken and the mallard. "They find abundance of food in the corn and wheat fields; while the population is sparse and larger game abundant, they are hunted very little; but as the population increases they are gradually thinned out, and become in some cases exterminated. Other birds, as the quail, are wholly unknown beyond the frontier, and only appear after the country has been settled a short time. Still others, woodland species, appear in regions where they were never known before, as groves of trees are planted and thick woods spring up on the prairies as soon as the ravages of the fires are checked."

That civilization has to some extent governed the migrations and geographical distribution of many species of our birds not directly warred upon as pot-game, for amusement, or because they are obnoxious to crops, could easily be shown; and when another two centuries have rolled around the effect will be very striking. The mocking and Bewick's wrens, the rose-breasted grossbeak, chestnut-sided warbler, and other species, have spread northward and become more abundant since the time of Wilson and Audubon; the bobolink has kept pace with the widening cultivation of rice and grain fields; the red-headed woodpecker has retreated from New England; the Arkansas flycatcher has multiplied and spread as a town-bird through all the

cities and villages from Council Bluffs to Denver; the raven has gradually retired before the wood-cutter, until it has almost ceased to exist; while year by year the crow has extended its range, without seeming in the least to diminish its force in the older districts, but crowding the wild and refractory raven farther and farther beyond the frontier. Lastly, we have enabled to spread everywhere that arch-enemy to our song-birds, and that great nuisance to the farmer, fruit-grower and ornithologist, the English sparrow, which is now habituated to every state and territory in the Union. If it is absolutely needful that the savagery that is left within us should be given bent toward bloodletting behind the safety of shooting at tiny and defenceless birds, here is the opportunity for such an exercise with least general damage; not but what the European sparrow is in itself as worthy of our kindness and protection as any other: but because in the artificial condition of things we have encouraged this too easily encouraged and aggressive species far beyond the part it would ever have played in the ordinary course of things, and must now turn against it lest a greater harm ensue.

On the other hand, certain species of birds, owing to their wary and timid temperaments, or because they ministered to man's enjoyment in some manner, have been seriously reduced or forever exiled. More than a hundred years ago, for example, was seen the last of the great wingless penguins or auks, which early writers quaintly called "wobble-birds."

All the game birds of the United States are sadly depleted; while many of the ducks and beach-birds once resorting to our salt-meadows, or to the shores of the Great Lakes, are now rarely or never seen.

Under partly protective laws woodcock, quail and ruffed grouse, may still be found sparsely distributed throughout the eastern half of the Union ; but the pinnated grouse has been exterminated. This bird—the prairie chicken of the Mississippi states—once dwelt plentifully from Massachusetts westward, wherever it found open tracts. The plains of Long Island and the sandy pine flats of New Jersey were especially favorable to this grouse, and it lingered there until within the last fifty years. Driven west of the Alleghanies, it has already become rare this side of the upper Missouri valley, though I can remember when it was one of the most common residents of Ohio and Michigan.

The same story is true of the turkey, which now, as a wild bird, is extremely uncommon outside of the sparsely settled region between West Virginia and Arkansas, while the game birds of the Pacific Slope states are hastening in the same line toward oblivion.

Another melancholy aspect of the case is the onslaught made upon our birds by the foolish demands of whims in millinery. Every year thousands of our most beautifully feathered songsters and insect-eaters yield their lives, which are spent in our service, and their voices, which so charm our ears as they trill across the meadow or ring through the dappled woods, in order that somebody may wear an outrageously stuffed effigy stuck upon a hat, with flowers made of cambric, fruit of wax and ribbons of silk! Nothing could be more out of place—the only animal appropriate to such surroundings would be a clothes-moth or a closet mouse. Yet, the slaughter and the absurdity go on. Bear with me while I give a single instance of what I mean by "slaughter." Every barren islet and beach along our northern coast was formerly tenanted by beautiful gulls

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and terns, or sea-swallows, as they are often called, which hovered in clouds above the yellow sands, where their nests were made, or skimmed in graceful circles the blue waves that furnished them food, flashing the sunlight from a million plumages of radiant white.

Their first enemies were the egg-hunters—an ancient practice; their next, so-called naturalists and sportsmen, who went to their breeding haunts and killed them by the score, chiefly for the excitement of it. Thus, many years ago, these charming wild fowl were driven in summer from all the islands and beaches near our seaports, lingering only on the unfrequented sandbars off Virginia. Thither they were followed, in 1883, by skin hunters, one taxidermist bringing back to New York no less than seven thousand, which he prepared for milliners' use. Last summer, I am informed, a party stayed upon Cobb's island charged with the task of filling a contract for forty thousand skins of roseate terns.

In the south a similarly woful fate has overtaken such birds—defenceless, but georgeously plumed—as the flamingo and scarlet spoonbill, whose bright forms once put charming touches of color into the dull, gray-green landscape, as they stood silent beside a reedy pool, or swept in flashing platoons over the cushiony green jungle of a mangrove kay. But all that was fifty years ago. To catch sight of a flamingo or spoonbill now, is a noteworthy occurrence, even in the Everglades.

The orders which stimulate this devastation of our groves and waters come mainly from Parisian bonnet-makers; and our country is not the only one to suffer from the same frivolous demand. The metallic-blue kingfisher, the brilliant sunbirds and certain other gems of feathered life, are

said to be nearly extinct in India and Cochin-China—sacrificed to hat-makers and jewellers. The birds of paradise—which Nature seems to have made pure feathers, to show what she could do in that line—are becoming alarmingly rare, even in remote New Guinea; and thousands of half-ruined skins find their way annually to the London auction rooms. In Central and South America many men make a regular business of shooting humming-birds by the hundred for the sake of their feathers; and it is equally true, but somewhat less advertised, that great numbers of our own brightly-plumaged songsters are every year sacrificed to this unwomanly barbarism.

Though many may be put on hats in their natural state, these birds are usually torn to pieces and dyed some absurd color, especially in the case of white plumage like that of our terns. The combinations which result when the French bonnet-maker reconstructs a supposed bird out of these dyed feathers, are amazing! Milliners' ornithology represents nothing between heaven and earth—except ignorance, cruelty and bad taste.

If these facts were understood, surely women like those who have honored me with their presence to-night, proud leaders of the mode—dwellers in this metropolis of wealth and charity—citizens of a republic, whose motto is "Life, liberty, and the pursuit of happiness;" women whose boast it is that they are broader and quicker in mind, more lovely in body than those of any other nation; women who despise sham, who shun cruelty, and who love what is tender and beautiful in nature because they are part of it; surely, I say, I may believe and rejoice that these gifted women will no longer, for the sake of an uncalled for and often misused custom, sanction the slaughter I have pointed out!

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Coming to the class Reptiles, a few words will suffice. The numberless species which make their home in swamps have, of course, almost disappeared with the drainage of those areas. The ceaseless warfare waged against serpents has resulted in the killing off of rattlesnakes and copperheads from well-settled regions. Turtles remain common, and, perhaps, increase, in our rivers, as do toads and frogs in our brooks and ponds, thanks to their own uselessness and the reduction of their natural enemies. The terrapin, however, sought for food, has become so scarce along the southern sea-coast, that the market is now supplied only by the breeding and cultivation of captive specimens; while the aldermanic green turtle is daily growing less easy of capture among the Floridan reefs and bayous. As for the alligator, it is now a treat to see one over a thousand miles of half submerged country where a few years ago they swarmed in countless throngs. This is owing partly to the utility of their rugged hides; but more to the senseless habit tourists call amusement, of shooting at every one that can be spied from the deck of a steamboat or ferreted out by an excursion into the interior.

If we could make and enforce a law which should permit so-called sport to be indulged only by a selected few who had proved their capacity for common sense and self-restraint, as well as their ability to kill what they shoot at, it would be a great advance toward the Millennium!

Turning now to Fishes, we come to a class of animals where the decrease within historic times is recognized by everyone; yet, perhaps, popular knowledge does not grasp half the truth. Not only the prominent, well-known species, but hundreds of varieties of obscurer fishes can now muster but a remnant of their former myriads. Almost the

only one to hold its own is the perch family. Every stream near any town, east or west, has lost its trout so completely that in respect to most of them it is forgotten that this fascinating sprite of the ripples ever existed. His small relative, the thyme-scented grayling of northern rivers, must now be sought by the angler on remote frontiers, while even the depth and breadth of the Great Lakes have not been able to preserve their former immeasurable stock of black bass and whitefish, to the artificial restoration of which the United States Fish Commission and local fish-culturists have been compelled to turn diligent attention.

The king of the most prominent and valuable group of anadromous fishes is the lordly salmon—a native of the colder inland waters of both hemispheres.

When we first hear of American coast-affairs, salmon regularly ascended all the rivers from Labrador down to the Housatonic, in Connecticut. It is the popular impression that the Hudson possessed them, but this is an error. So abundant and cheap were the salmon in New England, that it formed an item in the bond of an apprentice, at the end of the 17th century—only some two hundred years ago, mark you– that he should not be fed with salmon more than twice a week. This was following a precedent set in Ireland, where for centuries no salmon have existed, save those zealously preserved on waters owned and guarded by some wealthy proprietor.

Only a few years had passed, however, before the damming of the New England rivers, the lumbering operations, the netting of spawners, and the general waste which accompanies an unrestrained fishery, depopulated the streams. At present it is only in certain parts of Maine and the Maritime Provinces that any wild salmon may be taken by the Atlantic coast fisherman.

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The Columbia, Fraser river, and other West-coast fisheries for salmon, have been somewhat more cautiously dealt with, and the fish have the advantage of larger inlets to ascend, yet the signs of their approaching decadence are unmistakable.

Crowding all the rivers with the salmon, came various other swimmers, valuable as food, whose habit it also is to spend the larger part of their lives in the sea, but periodically to resort to fresh water for the purpose of depositing their eggs. Principal among these were the bass, or rockfish, the alewife, the shad, the fresh-water herring, and a few others. Thomas Morton writes that in 1632 he saw the Merrimac so filled with bass, on their way out, that it seemed as though one might have crossed dry-shod on their backs.

Several of these species ascended southern inlets as well, and it is almost impossible to reckon from the present remnants back to the multitudes which history assures us once choked the currents. Salmon are now limited to eastern Maine and New Brunswick. In respect to herring and alewives, the reports of the United States Fish Commission show that the present catch is not one per cent. of what appears in early records. As to shad, whereas, only fifty years ago, at least six hundred millions of pounds were taken annually in the Potomac, supplying a large export trade in salted fish, the catch now hardly reaches one quarter of a million pounds; that is, only *one* shad is now yielded by the Potomac for every twenty-five hundred taken in 1830. Correspondingly, the catch of herring has diminished from seven hundred and fifty millions of pounds to about five millions.

The list might be extended, but what I have just said ex-

presses the state of the case with all our anadromous fishes—a class which includes those most numerous and most easily available for market. Their decline and threatened extermination is due wholly to man's pursuit, and his interference with their mode of life and habits of propagation. Instead of clear-flowing rivers, open from their springs to the sea, the ascending hordes of oceanic prodigals find the homeward streams thick with sawdust, turbid with earthy sediments set afloat by works of agriculture or engineering, and polluted by the deadly drainage of sewers, gas-works and factories. Could they endure this unhealthy condition, they must encounter not only nets and weirs, opposing their ascent and awaiting their return, but also the impassable barriers of dams cutting them off from hereditary spawning-grounds. Even after it came to be recognized that nets must be of such a character as to permit their passage, and that dams should be provided with ladders, or shutes, the fish were still so hindered as to interfere sadly with their health and effective spawning.

Now it happens that the river-breeding, anadromous fishes form the regular prey of a large number of deep-water species, whose flesh forms a staple commodity of the working population, because of its cheapness and high nutritive qualities, while trained cooks are able to turn it into delicacies enjoyed by the epicure. Of these, the cod is perhaps the most important example; halibut, mackerel and bluefish are others.

Closely pursuing the shad, salmon, herring, and so forth, when, in spring, they seek with anxious solicitude the estuaries of the rivers, at whose headwaters they mean to deposit their eggs, follow armies of these bluefish, mackerel, cod, halibut, and their associates, persistently seizing

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and feeding upon their weaker brethren. After the main body of the fugitives has passed into the stream, these bandits still cruise hungrily in the offing, waiting to pounce upon the returning hosts of young and old as they come drifting back.

It is this congregation of their food that accounts for the presence near the coast during spring and summer of the schools of predacious fishes I have mentioned, and which are really of more commercial importance to us than those they pursue. In losing salmon and shad, therefore, we deprive ourselves of more than at first appears; for by the diminution (in many and many a locality amounting to extinction) which has come upon the river-spawning fishes as a consequence of the civilization of the country, the predatory cod and its kindred have lost any inducement to visit our offing in the warm weather; while the pollution of harbors and river-mouths by sewage (such, for instance, as is set afloat from our garbage-scows), has driven them to deeper, purer and more remote localities, in search of agreeable breeding-places.

Therefore where, a century ago, cod were so plentiful that a man could catch enough, day by day with one line, to support his family (the earlier colonists of Massachusetts even used them by the ton as manure for their cornfields); and halibut were considered almost worthless, because so easily procured anywhere off our New England and Middle shores—*now* the fishermen are forced to go to distant shallows, in the midst of a wide and stormy ocean, and can only fish at the most inclement season of the year, at great risk of their lives.

Allied to this subject, but perhaps of more immediate interest to us here in New York, is the history of the

decrease of American shellfish—more particularly the oyster.

The habitat of the oyster on the Atlantic coast of the United States was originally far more extensive than at present, as I have shown in my Monograph of the Oyster Industries, printed by the Census Bureau of the Government in 1881. At the time of the first settlement of America oysters flourished naturally all along the St. Lawrence coasts of New Brunswick and Prince Edward Island; at many points on the coast of Nova Scotia and Maine; in nearly every inlet of Massachusetts bay, especially in the river-mouths and back bay at Boston; and almost continuously from Buzzard's bay, at the "heel" of Cape Cod, along the coast southward to Mexico. Exposed beaches of sand (like that of the outer coast of New Jersey and Virginia) were unfitted for oyster growth, and, of course, bore none; but every inlet through these beaches, with each lagoon they sheltered, was densely occupied by the succulent bivalves. A rapid review will indicate how they have disappeared. In the Gulf of St. Lawrence one locality alone now produces any oysters for shipment. None whatever have been known in Maine, or in Massachusetts bay for so long a time that their former existence was wholly lost sight of, and it even came to be taught in scientific books that the oyster never grew north of Cape Cod. In Buzzard's and Narragansett bays, and in Long Island sound almost no wild oysters are now to be gathered of marketable size, the beds which remain being raked so persistently, for the purpose of obtaining seed for transplanting, that none of the young mollusks have time to grow to an age making them edible. The south shore of Long Island, Staten Island sound, and New York harbor, tell the same

story. In southern New Jersey the natural beds are not yet quite exhausted, Delaware bay still furnishing a good many deep-water oysters; while in the Chesapeake bay little cultivation is carried on, and the majority of those brought to market are of natural growth. But even in those extensive waters the decrease of the supply is becoming alarmingly manifest. In the warm waters of the southern states nearly all the native oysters are of an inferior, almost worthless kind, and the good, large oysters, scattered in favorable situations among them, which are fit for use, are becoming scarce in consequence of steady tonging, even in the Gulf of Mexico. On the Pacific coast the two or three localities (all in Washington territory) where fine oysters were formerly obtained, have been completely stripped and abandoned.

Nowhere, perhaps, has this destruction of our natural supply of this nutritious and delectable mussel, bestowed upon us so bountifully, been more manifest than here in New York bay.

Manhattan island and the shores opposite, were rimmed with oysters of great size and appetizing flavor. The early chroniclers went into ecstasies over them, and descanted upon the great value to the poor of this food-supply which was accessible to everybody without more cost than the labor of gathering, and which was then fondly believed to be inexhaustible. A considerable commerce was established in the pickled article between New York and the West Indies as early as 1745, following the earlier lead of Boston. These oysters were gathered chiefly at Harlem, Gowanus, on the Jersey City shore, along the Communipaw flats and in the Kill von Kull. Extensive reefs filled the shallows of the western part of the bay, and old maps

designate a "Big" and a "Little" Oyster island between Bedloe's island and Bergen point. The Rev. Samuel S. Lockwood, an authority in this matter, asserts that an area of no less than three hundred and fifty square miles of reefs inside of Sandy Hook was yielding edible oysters when the Dutch first set up their villages along the Hudson.

This great extent of food-growing ground has long since wholly ceased to be productive of anything fit for food. Over most of it oysters and clams are utterly extinct. A portion is still scraped annually with dredges to obtain seed for the submarine farms of the oyster-growers, but even in that respect it is comparatively insignificant, and of no public value.

Yet, despite this condition of things (now as old as our memories), hardly more than a century has elapsed since men believed that the oyster-beds of New York were inexhaustible, and that a small measure of legal protection, feebly maintained, was quite enough to sustain them against any chance of decay. So they thought in Massachusetts, where the oysters have not only disappeared, but have been forgotten. So they think now in Maryland and Virginia, where their fond expectations are destined to equal downfall!

For much of the change I have dwelt upon in the status of the brute population of the continent during the last three centuries, involving the loss of much that was interesting and valuable, a short-sighted and wasteful policy, or lack of policy, is responsible: Much of it was inevitable. Whether it is worth while that a continent should remain uncivilized in order to preserve its wild animals in

their original numbers and freedom is hardly debatable in a cultivated community—at any rate we could get only an *ex parte* statement, and decision by a jury which beasts of the field and fowls of the air might reasonably maintain to be packed.

Yet, it is possible to examine whether much of the waste I have noted in our animal resources might not have been prevented; and, putting aside any moral or sentimental considerations—viewing it only from the most prosaic and commercial standpoint, does not this matter call for more earnest attention than it has yet received from the general public.

I do not propose to discuss the question or suggest any plan for the better protection of animals, useful and beautiful, which we are swiftly civilizing off the face of the earth, to our own detriment as well as to theirs. I am here only to lay before you certain historical facts, and to try to leave upon your minds an impression in regard to them which shall be like seed sown in good ground.

CAMBRIDGE, March 1st, 1885.

CHIEF JUSTICE DALY, LL.D.,
President of the American Geographical Society.

DEAR SIR: I desire to place in your hands a summary statement in regard to the results of some geographical studies in which I have been engaged.

The time when my completed paper, with the accompanying sketches and maps, will be ready for publication depends upon two or three considerations which I cannot control. Meanwhile, it seems proper that I should deposit with you a brief record of the discoveries I have made.

They are

1. The site of the Landfall of John Cabot in 1497.

2. The site of the Fort Norumbega of the French, on the banks of the river bearing the same name; and of the Indian settlement near the fort,—the Agoncy of Thevet; and near it the Norumbega of Allefonsce, visited in 1569 by the sailor Ingram and his companions of the unfortunate expedition of Sir John Hawkins.

I submit herewith a brief outline of the considerations on which my conclusions rest.

I.

On the map of Michael Lok (1582), of which the copy in Hakluyt (Divers voyages touching the Discovery of America) prefacing the relation of John Verrazanus, p. 55, is here referred to, you may recall between latitudes 42° and 51° N., and between the meridians of 300° and 320°, a large island, and on it, in prominent letters, NOROMBEGA,

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and in lesser letters, *John Gabot, 1497.* The point of land against Claudia, a smaller island, is between 42° and 43° N.

This fragment of the map, *not including* the inscription "Jac Cartier 1535," and the coast-lines of the region above, *but taking in the outline of the neighboring shore southward to Carenas, the latitude, the names Carenas, Montes Johannis, Claudia, St. Johan and Cape Breton,* I have taken to be a sketch, produced by John Cabot on his return from his voyage, early in August, 1497,* of what he observed between the morning of the 24th of June and the date of his departure from our shores.

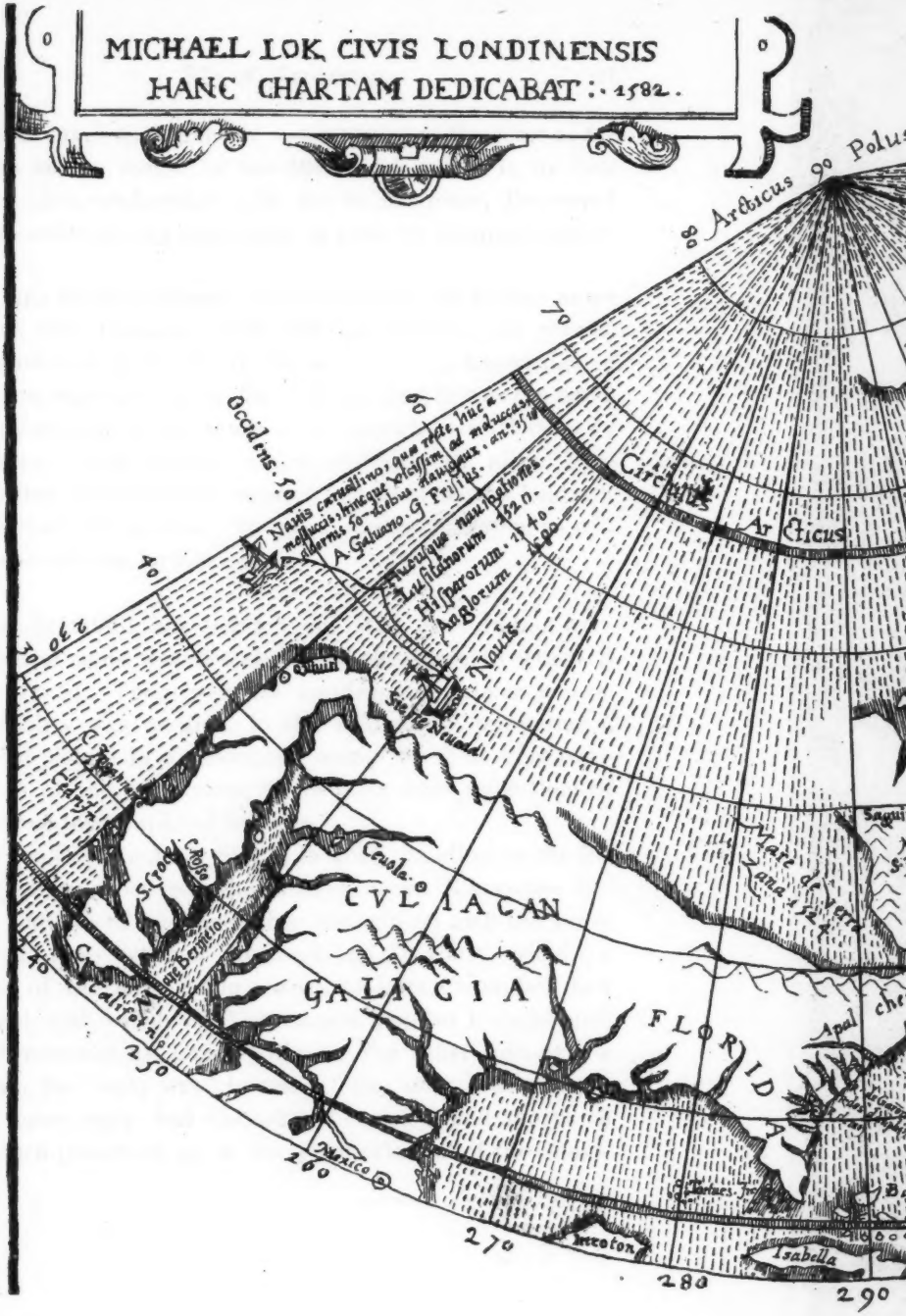
The safety of this assumption will be seen as the considerations on which it rests are unfolded.

John Cabot believed his landfall, like that of Columbus, five years before, to have been on an island. The site of the landfall has been lost. When it shall have been found we may know who, first in the fifteenth century, saw the continent of America; for Columbus came upon the main land (South America) in 1498; and Vespucius a year later.

The map of Lok presents Carenas (enough recalling Kjalarness of the Norsemen to suggest heirship), the C. de Arenas in various forms, of so many maps of the sixteenth century, the Cape Cod of Gosnold, and, as seems to be determined by the flags on Cosa's map of 1500 (Dr. Kohl, Maine His. Col.), the southern limit of Cabot's explorations in 1497.

The outline of Cabot's chart, and especially that of

* The elaborate paper on John Cabot, by Mr. Charles Deane, in Winsor's America, leaves no question unsettled as to 1497 being the year of the first voyage of John Cabot to our shores.


MICHAEL LOK CIVIS LONDINENSIS
HANC CHARTAM DEDICABAT :· 1582 ·
80 Arcticus 90 Polus
70
60
Oculus. 50
40
30
230
Arcticus
Circulus
Nauis
Sta Nauidad
Cuba
CVLIACAN
GALICIA
FLORIDA
Tierra de Labrador
Tierra de Bacalaos
Tierra de Estevan Gomez
Tierra de Verrazana
Tierra de Labrador
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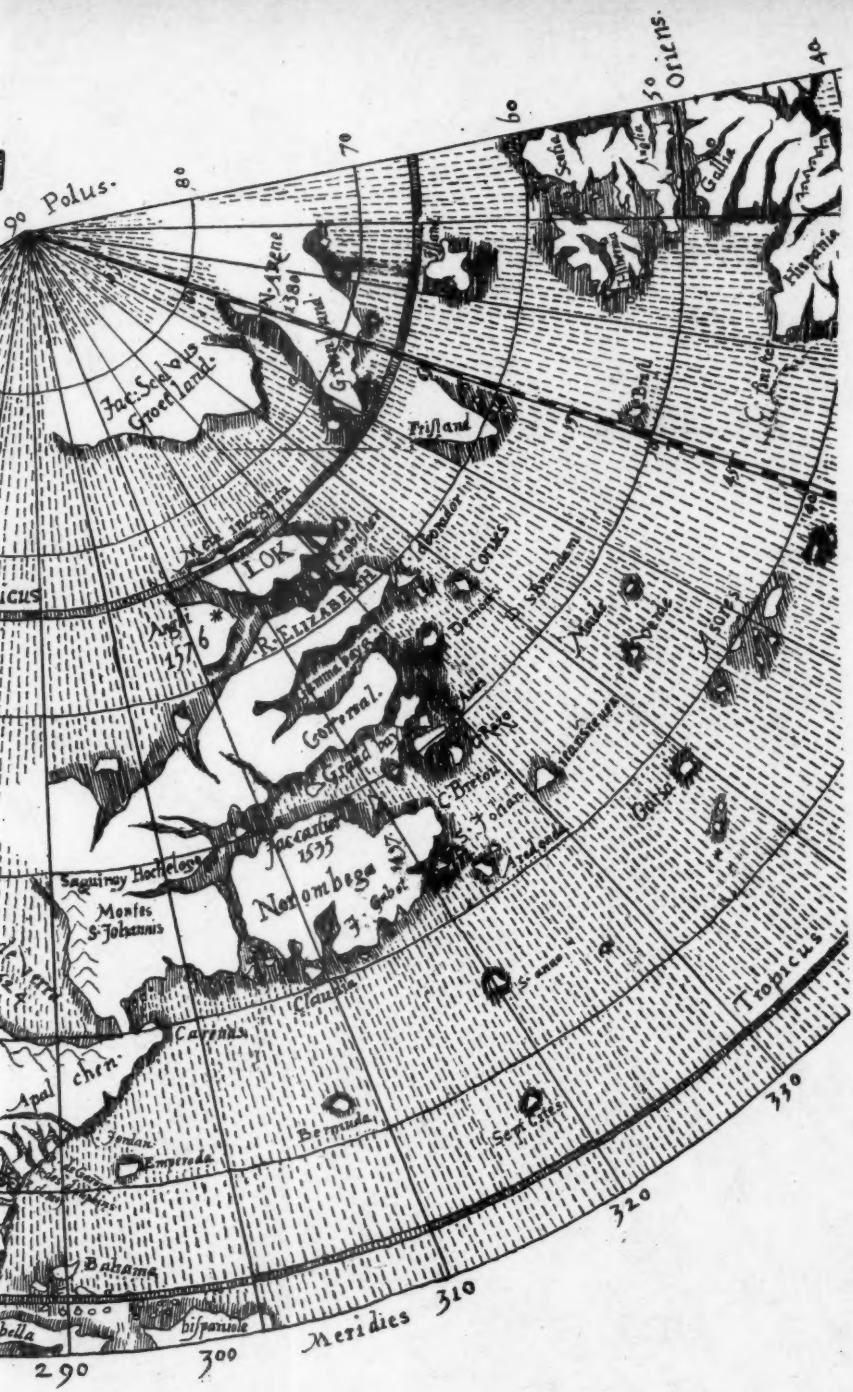
90 Polus.
80
70
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50 Orientis
40
Fac: Scelvis Groetlandt
Groetlandt
Islandt
Gallia
Hibernia
Friesland
Nova incognita
LOK
R. ELIZABETH
Anglia
1576
Gronland
Labrador
Terra Corterealis
Hudsons bay
Jacobs
Jacartan
1535
Norumbega
Montes S. Johannis
Saguinay Hochelaga
Florida
Gulf of Mexico
Cuba
Hispaniola
Jamaica
Bermudas
Sagittarius
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Bahama
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XUM

Cosa's, suggests a general resemblance to the coast as far north as the mouth of the Merrimack, which is, by Lok I conceive, confounded with the St. Lawrence, discovered as recorded on the same map, in 1535, by Jacques Cartier.

I take the Norombega (or Norumbega) to be the name which (like Carenas) Cabot did not bestow, but *found.* He gathered, naturally, in the absence of a knowledge of the language spoken by the natives, that it was the name of a *locality*, in the sense of a district, or settlement or country. This notion, which students all alike have inherited, has obscured research in regard to the landfall, from that day to this. It was a mistaken notion, as will become obvious farther on.

Dr. Trumbull has pointed out that each Indian geographical name was *descriptive* of the place to which it was affixed. There were no *meaningless* proper names. A locality was recalled, to the Indian, by presenting a mental picture in a descriptive term. So there were repetitions of the same name where there were repetitions of the same topographical features.

When Captain John Smith, in 1614, standing on the little peninsula between the modern Jones River (the Rio San Antonio of the preceding navigators) and the outer harbor or bay between Plymouth and Duxbury, asked the name of the site of the cluster of huts Champlain had figured, and which on Verrazano's map (so I conjecture) is represented as Lunga Villa, on the other side of the stream, the reply was *Accomac*, "*the other side place.*" The same reply was elicited on enquiry, and the name has been preserved, as to the peninsula east of the Chesa-

peake,—*Accomac*, "*the other side place.*" The same name, with dialectic variation, was applied to England, the home of Roger Williams, by the Indians of the Narragansett tribe,—*Accomac*, "*the other side country.*"

As there were many "*beyond lands*" (accomacs), so there were many "*falls*" (pautuckets); many "*hills*" (wadchus); many "*ponds*" (baugs, paugs), &c.

There were, of course, *different* names for the *same* place, determined from the point of view of the observer; as for Boston, *Sha-um-ut*, "near the neck,"—the settlement between Haymarket Square, the head of an ancient cove—and Dock Square,—(Blackstone); also, *Mushau-womuk*, the "canoe landing place" (Indian books of 1699 and 1700); also, *Accomonticus*, the "beyond-the-hill-little-cove" (Ogilby's America, 1671); also, *Mess-atsoo-sec*, the "great-hill-mouth" (Rasles, and Wood's N. E. Prospect*). All were Indian names of Boston. All were descriptive.

The same name was applied to objects possessing some greatly unlike qualities, but having others in common; as *Mi-sha-um*, the "great-parallel-sided," was the name of Charlestown Neck, *great* as compared with Copp's Hill, the north extension of the *Sha-um*, "the neck" of Boston. *Mi-sha-um* was also the name of Charles River (Wood's N. E. Prospect), the "great-parallel-sided."

It is also the name of canoe—*Mi-sha-on* or *Mi-sho-on*—and of the long, straight trunk of the tree from which the canoe is made (Heckwelder).

As there were no *proper* Indian geographical *names*, and as *Norumbega* was *descriptive* of topographical or

* Wood gives the modified Massachusets.

hydrographical features, the first task was to find its meaning. That might help in finding the locality. To this end aid was long sought in vain in vocabularies. It seemed an obvious Algonquin word. But in any form of ready recognition—any form that familiar dialectic variation would include, at least within the range of my limited study—it eluded my search.

Feeling sure on the point that the name was *descriptive* of some locality on or near the sea-shore, and therefore embracing probably both land and water, I began by placing the Indian geographical names of the region of the Atlantic coast from the St. Lawrence to Long Island, N. Y., in columns against their respective latitudes along the outline as given in the chart of the United States Coast Survey.

On glancing through the names so arranged, I remarked a striking peculiarity. The names grew *easier of utterance* as one moved southward. *Quebec* on the St. Lawrence became *Ahquebogue* on Long Island, N. Y.

Kennebec (of Maine, the Aghenibékki of Rasles) became *Quinnebequi*, and farther south *Quinnebaug*, *Quirripiohke*, and lastly *Quinnepyóohgq* on Long Island Sound. *Keag* became *Quag*, *Quaog* and *Quau-ogue*, (*Quohog*).

As one moved southward from a region where the conditions of living were hard to where they were less exacting; from the region where life was perpetual struggle to a region where there was relative leisure; where there were more extended manufactures (wampum), more commerce (furs), more decoration—the names became softer:—as they become softer as one goes from Norway southward to Italy or Spain.

Bec, as the terminal syllable of a name north of the Merrimack, was not found *south* of the *Charles*, but in its place, as already intimated, appeared *baug*.

Between these rivers we might look for an intermediate form; we should find the *southern* limit of *bec*, or as spelled by Rasles (as above) *be-ki*, and by Father Vetromile *be-ghe*, making two syllables; and we should find the *northern* limit of *baug*.

We do not know how John Cabot thought the Indians pronounced the last two syllables of Norumbega; whether as if requiring two e's, thus, *beega*, or but one, as in *beg*. The French of later date wrote it *bégue*.

Of the Indian names preserved from the days of Captain John Smith (1614), along the coast between the Merrimack and Charles, there are but two, or at most three, that begin with *N—Naumkeag*, *Nahant* and *Nantasket;* the latter the headland on the south side of the entrance to Boston Harbor, the mouth of the Charles.

Naumkeag, or Nahumbeak, is the ancient Indian name of Salem. The first occurrence of the name in print is in the record of the intrepid Captain Smith. It will be remembered that, landing on the island of Monahigan [or Manigan,] off the coast of Maine, after instructing a portion of his ship's company to collect fish, he coursed with a boat's crew of eight beside himself, from the mouth of the Penobscot to Cape Cod, looking into and sounding the harbors, and acquiring the Indian names of the places along the shore, and some of those inland. Among these was Naembeck, sometimes written by him Naemkeck, apparently with indifference, or as if he thought the first letter of the terminal syllable might be either *b* or *k*.

He placed these names upon his outline map of the coast, and, on his return to England, published it with an account of his discoveries, together with a scheme for colonizing *New* England. While seeking in various ways to awaken interest in his project among the English people, he met with no little opposition; and fell at length upon an advertising idea, as we shall see, of far-reaching influence. He invited the eldest son of the King, Prince Charles, then a boy of fifteen or sixteen, the future Charles I., to attach such English names to the localities bearing the Indian names as might be acceptable to his Royal Highness, and so obliterate the barbarous names. The Prince acquiesced. He gave names to sites of towns, bays, capes, mountains, &c., of which four only have been retained—Cape Ann (named after his Royal mother), Plymouth, which came to be occupied by emigrants of the Mayflower fleet, Charles River, of which Smith gives the Indian name Massachusets, and Cape Elizabeth.

The Prince, like Smith, conceived the names to be *proper* names. Ogilby (1671) imbibed the same notion. He says, in his detailed account of the settlement of the earlier New England towns, the "Indian name of Salem was Nahumbeak." We have already seen John Cabot's inscription of Norumbega as a *country*. As intimated above, it will be seen that the name was a mere descriptive appellation, permanent only to an observer from a given point, and changing from Nahum-beak to Nahum-keak with change in the point of observation. The name of to-day is Naumkeag.*

This name—Nahumbeak—is the only name preserved to us between the Merrimack and the Charles, that at all suggests Norumbega.

* This point is discussed at length in my full paper.

II.

Let us now proceed with the study of the meaning of the word.

The word is resolvable into two members: *beak*, of which we have already learned something, and a remainder, *Nahum*, to be the subject of special study.

Beak may be divided into two syllables, *be* and *ak*.

The first syllable appears in the Delaware language according to Zeisberger, m'bi; or in the Narragansett, n'pi, or n'p. Rasles gives for the Abnaki dialect, nearly the same—neb. In its combinations m' and n' are dropped, and what remains means *water*, in the abstract; or, possibly, as there seems to be indication of it, water as a *beverage*.

The second syllable is what remains of *ahke*, land. This corresponds with, and is a dialectic variation of, *auke* (Roger Williams), and *ohke* (of regions farther south).

The combination without abbreviation would give us be-ahke, which with an accute accent, corresponds nearly with the word bé-ghe, given by Father Vetromile as the pronunciation of the Penobscot Indians of to-day.

This word, according to Vetromile, means "still water." According to the old Penobscot Indian hunter, John Pennowit, whose authority Mr. L. L. Hubbard relies upon, it means "dead water," that is, "water without current."

Such water farther south might be called a *pond*, ending in baug or paug (*e. g.*, Quinnebaug, Ponkipaug), or, as nearly enclosed "dead water" between rapids above and below, such as Father Vetromile encountered when enquiring for Norumbega (what the voyageurs called Nolum-beghe); or it would be a bay or harbor, such as Naumbeak.

Be-ak or beah-ke, or be-ghe or be-ga, would apply to the harbor of Salem, between Marblehead and the Beverly

shore, inside of Baker's Island, or of the many "*Breakers*" of the Coast Survey map.

These four forms differ but little from each other, or they glide into each other, and are quite within the limits of dialectic variation; indeed, within the limits of such possible deviation as might occur in the utterances of neighboring settlements, and altogether within the range of deviations in names such as the Indian name of dog, as will be seen further on.

It may be accepted, then, that the two syllables in be-ak are the dialectic representatives of the two syllables in be-ga, and mean water *without current*, as the water of a bay.*

Let us now turn to the first two syllables of Nahum-beak.

These occur in modification, in the various ways of writing the same name by Smith, Ogilby, Wood, Gookin, Lothrop, and others, for example:

N a hum (Ogilby gives the aspirate).
N a um.
N a am.
N a em.
N a m.
Nehim.
N e m.

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* I find in Conn. His. Soc., Vol. II., page 15, in Dr. Trumbull's paper on Indian Geographical names, under 4—"Paug, pog, bog (Abn, *-bega*, -begat; Del. pecat;) an inseparable generic, denoting *water at rest.*"

I had sought for the word *bega*, as a "*separable* generic," in Rasles' Dictionary, but without success. Dr. Trumbull had been more thorough. What I had deduced with some circumstance, was thus confirmed in the most direct and satisfactory manner. It came to me only after my letter had been placed in the hands of Judge Daly for publication.

It may be questioned whether *Bega* is an "inseparable generic." In Ingram's relation we have both *Bega* and Norumbega.

Rasles lived and wrote at Norridgewolk, on the Kennebec, not far from the southern limit of the Abnaki country, and of the prevalence of their dialect.

The first syllable is sometimes No, sometimes Na, sometimes Noa, and of still other forms of which mention is made by Trumbull.

It means—*middle, dividing, between, separating.*

Rasles gives for *midway,*

Na-wi-wi.

Wi means way. In this word the syllable *wi* is repeated, that is, there are *two ways.* Midway is where the two ways come together, or where the *single way* is divided into *two ways.*

Na-sha-wi (Nashaway) is a word frequently used by Eliot in his translation of the Bible into the Massachusetts dialect. Sha, which means *parallel-sided,* * with the prefix na and the suffix wi, is used by him as the Indian equivalent of "between the walls" (of a street, *e. g.*). Na-na-sha-wi or *we,* (na repeated for emphasis) he employs for "*in a strait betwixt two.*"

Na by itself, in which form it does not occur, would be a preposition; but combined with um, (or wum or un or on?) in the Massachusetts [Natick] dialect it is converted into a substantive.

As sha (*parallel-sided*) with um becomes the noun Sha-um (*neck*); so na *between* or *separating,* with um, becomes the noun Na-um (*divider*).

Na-sha-un is the "*parallel-sided*" island between Buzzard's Bay and the Vineyard Sound (Nau-shaun).

Na-sha-onk (onk means upright) is throat—"*Middle of the parallel-sided-upright.*" Mun-na-onk, (Mun means elevation) "*elevation—in middle—of upright,*" is also

* The etymology is discussed at length in my full paper.

throat, or, more especially, the middle projection, the *larynx*.

We have thus pointed out the meaning of *Nahum*.

It is "*divider*."

In combination with beak, it is "*divider of the bay*."

That which divides a bay—a tongue of land rising from the bottom of a bay, which makes two bays, is a *Nahum*.

The meaning of

Nahum-beak is *Divided Bay*,
or *Divider of the Bay*.

Nahum applies to Salem Neck, which divides the waters of Beverly shore—the North River, locally so-called, from the South River, beyond which is Marblehead.

We have seen how *beak* is the dialectic equivalent of *bega*.

How are we to see Nahum the equivalent of Norum, or Norem, or Norim, &c., as the name appears in Norombega on different maps of the Sixteenth Century?

We have, happily, an historic instance of parallelism of dialectic variation.

Roger Williams, Eliot, Experience Mayhew, and Josiah Cotton, and several more modern writers have been impressed with and remarked upon the dialectic variation in the pronunciation or spelling of the Indian name of dog.

It is	Ayem,	Narragansett (Roger Williams).
" "	Alum,	Narragansett and Nipmuk (Eliot).
" "	Anúm,	Massachusetts, Um *produced* (Eliot).
" "	Aunum,	Massachusetts (Wood's N. E. Prospect).
" "	Annúm,	Massachusetts (Cotton).
" "	Arum,	Northern Abnaki.
" "	Attum,	Etchemin.

The primitive root here is the simple bark *ä*, to which, with an intervening consonant, the syllable *um* is joined, which makes a "substantive" in the dialect spoken in this region.

Eliot remarks, as mentioned above, that the sound of u is *produced*, that is, it is like oo. This provides for one of the sounds of o in the second syllable of *Norom*—um may become *oom* or, perhaps, *ōm*. The first syllable was, in Eliot's day, sometimes spelled No, as well as Na, as already remarked.

Between these two syllables, *a* and *um*, there might be interposed a variety of consonants. As there was no r in the Narragansett language, according to Roger Williams, they substituted the letter l, or omitted the consonant altogether as in Ayem. The interchangeability of l and r in the Algonquin has been remarked upon by Williams and Eliot and Cotton and Mayhew, and every modern writer upon Indian dialects. Williams' Key appeared in 1643.

In some combinations in Indian (Algonquin) words the interchangeability or alternateness, includes *n* with *l* and *r* (*e. g.* Quille, quirri, quinni).

We have thus pointed out the dialectic equivalency of the several elements of Norumbega with those of Nahumbeak.

We may have *Na* or *No* and *l* or *r* with *um* or *om* or *em* or *im;* or neither *l* nor *r*, but simply *um* or *hum*, and *beghe* or *bega* or *beak* or *bégue*.

Where, instead of a *bay* divided by a tongue (Norum or Nahum) of *land*, there are *head-lands*, divided by a tongue (Norum or Nahum or Naum) of *water*, as Marblehead and Marblehead Neck, there was Na-um-Keak (Keak=ahke-ahke). Naum*keag* may not be the equivalent of Naum-

keak. The termination *eag* occurs in instances where there is shallow water, and in some cases where the bottom is bare at low tide. It was applied by the Indians, in relatively recent times, to the North River at Salem (His. of Old Naumkeag). The Naum or Tongue may be merely the *deeper bed* of the river *separating* the shallower waters on either side. Both Naumkeag and Nahumbeak occur on sheets of water inland as well as along the seashore.*

Norumbega may, like Naumbeak, apply to any bay from the bottom of which rises a narrow tongue.

It is obvious, therefore, that the determination of the meaning of Norumbega and its identity with that of Nahumbeak has made it—at the best—probable, that the Nahumbeak of Salem Harbour is the Norumbega of Cabot. It has also made it *probable* that the Norumbega of Cabot is to be found in the belt of latitude in which meet the terminal syllable *bec* which prevails at the North, and the terminal syllable, its dialectic equivalent, *baug*, which prevails at the South.

III.

If we look carefully at the sketch of John Cabot on Lok's map of 1582, we may remark that the *outline of the shore* against the island Claudia rudely resembles the cap-

* It is not worth while to point out in this summary the wide range of dialectic variations of these words which I have found. A few may be alluded to. There is Naam-keake on the Pond Annannieumsic, in Chelmsford, near Lowell. Another is concealed, near the Merrimack, in Amoskeag; less perfectly in Naumkeag; more deeply in Nehim kek, in Namskaket, in Namasket, and in half a dozen or more of others, all of which have been the subject of discovery in the detailed town maps of Massachusetts, and of investigation in early Massachusetts history.

ital letter M, the V portion between the two columns corresponding with the tongue or Norum.

If you take a tracing of the outline of this bay on Lok's map, and apply it to the map of Cosa (1500), you will find the Norumbega, or the letter M, within a large island and not far from the Cabo de Yngla-terra—(the Cape Breton of Cabot, the Cape Ann of to-day).

I conjecture this portion of the coast was furnished by one of Cabot's crew.*

You find the M—this Norumbega—on the map of Thorn (1527), who claimed that his father was with John Cabot in 1497.

You find the M on the map of Verrazano. If you will note in the letter of John Verrazano to the King, one of the two bays he visited where he found the tide *eight feet* (which range is attained north of Cape Cod), you will find the letter M—the Norumbega—the *divided bay*, figured there. It was here that he remained fifteen days.†

You will find the Port du Refuge, Port Real and La Paradis, mentioned by Thevet, on Gastaldi's map, 1550, and the two former names, together with the letter M, on the map of Hieronymus Verrazano. The map of Gastaldi still retains the shadow of Cabot's sketch, and of Cosa's Straits —(the notion of the margin of an archipelago).

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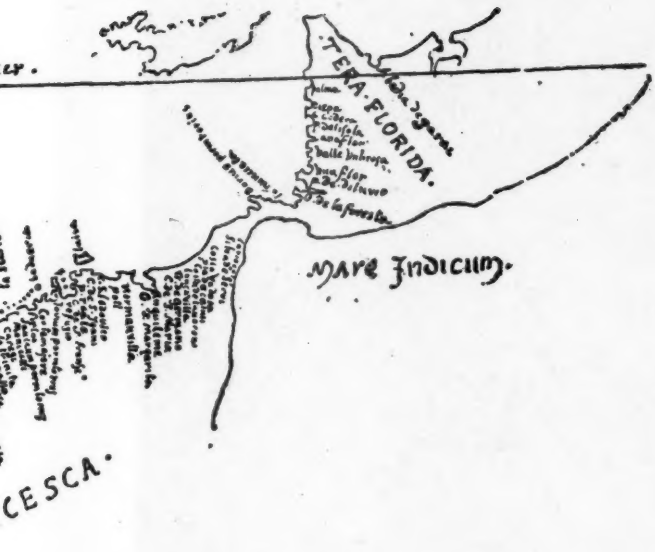
* What so natural as that the sailor who had been, as I conceive, with Cabot, and had perhaps shipped with Cosa (who was not personally on the shore of New England), should have given prominence to the feature which had challenged the attention of himself and shipmates? A careful examination of Jomard's Cosa's map will show that twice the contributor reduced the length of the tongue, rising from the bottom of the bay, as his judgment required, in the sketch which Cosa has preserved, and with it the sites of the English flag.

† There is another key, besides the tide, to the localities on the map of Hieronymus Verrazano, in the isthmus which separates the Mare Verrazana of

XUM

MAIOLLO, OR MAGGIOLO, 15



Vesconte de Maiollo composuy hanc cartam
in Janua de anno dñi. 1527. die x. Augusti.

GGIOLO, 1527.[1]

XUM

You will observe Refugium and Porto Reale and, possibly, the M on the globe of Ulpius.

You will find the name Nurumberg and the letter M with Refuge Real and Paridis, with Cape Breton ; and Claudia replaced by Brisa I. on the map of Ruscelli, 1561. (Brisa is French for breakers; see *breakers* indicated on Coast Survey Map).

Buno [Buno's Cluverius] names as belonging to *Norumbegua*, these several places, viz.: Porto del Refugio, Porto Reale, Paradiso, Flora, and Angolema.*

The M is not given on the map of Champlain, 1603, nor on that of Smith, 1614.

The M appears at Salem in great distinctness on Winthrop's map (1634), together with Baker's Island, under which he anchored, in 1630, as Cabot is conceived to have done June 24th, 1497, one hundred and thirty-three years before.

Finally the M appears at Salem on the Coast Survey Map, with Baker's Island (Brisa or Briso) and *breakers*

Lok's map from Massachusetts Bay; see, also, the maps of Agnese 1536, Ptolemy 1540, Ruscelli 1544, and the globe of Ulpius. *This isthmus is the narrow part of the Cape Cod peninsula, in the neighborhood of Barnstable* where it is even less in width than the six miles given by Hieronymus Verrazano:

"Da questo mare orientale si vede il mare occidentale. Sono 6 miglia di terra infra l'uno a l'altro." "*From this Eastern Sea one beholds the Western Sea. There are 6 miles of land between the one and the other.*"

East of this isthmus lies the puzzling extension of the peninsula of Cape Cod, the Terra Florida of Verrazano, 1524, and of Thevet, 1556; the Cape Norumbegue of Allefonsce, 1540–45. It is shown on Maiollo's map.

* The various forms of this name, as given on Ruscelli's map—Angoulesmes, on Gastaldi's, Angoulesme, and the same in Thevet's account, all follow the *Anguileme* of Maiollo's Verrazana, and apply, I conceive, to Charles River. This conception has support in that one of the names of the Charles was the descriptive Mi-sha-um—the great-parallel-sided—or *Eel-river*, of which Anguileme may be the French equivalent.

designated as outer, inner, middle, dry, southeast, &c., studding the outer harbor.*

The identity of the outline M with the earlier Norumbega and the later Nahumbeak and the present outline of Salem Harbor will be obvious on a glance at the outlines from Lok, down to the Coast Survey, which I submit herewith.

The island off the letter M is seen on the map of Lok (John Cabot's sketch, *Claudia*); without name on Gastaldi's; as *Brisa I.* on Ruscelli's; as *St. Nicolaus de la Trinidad*, on Cosa's; *Luisa* (possibly Marblehead Neck, formerly an island), on Verrazano's (Maiollo's and Hieronymus Verrazano's); and islands without name, off Refugium and Porto Reale on the globe of Ulpius. It is also given on Thevet's map, in about its proper position as *Claude.*†

IV.

I have further taken the names and distinctive features on Cabot's sketch in Lok's map and have traced them through a long series of maps down to the time of Winthrop, with the successive accessions of new names, and from time to time the disappearance of others, either by dropping out or by replacement, showing, as it were, dovetailing, which binds the series of maps together.

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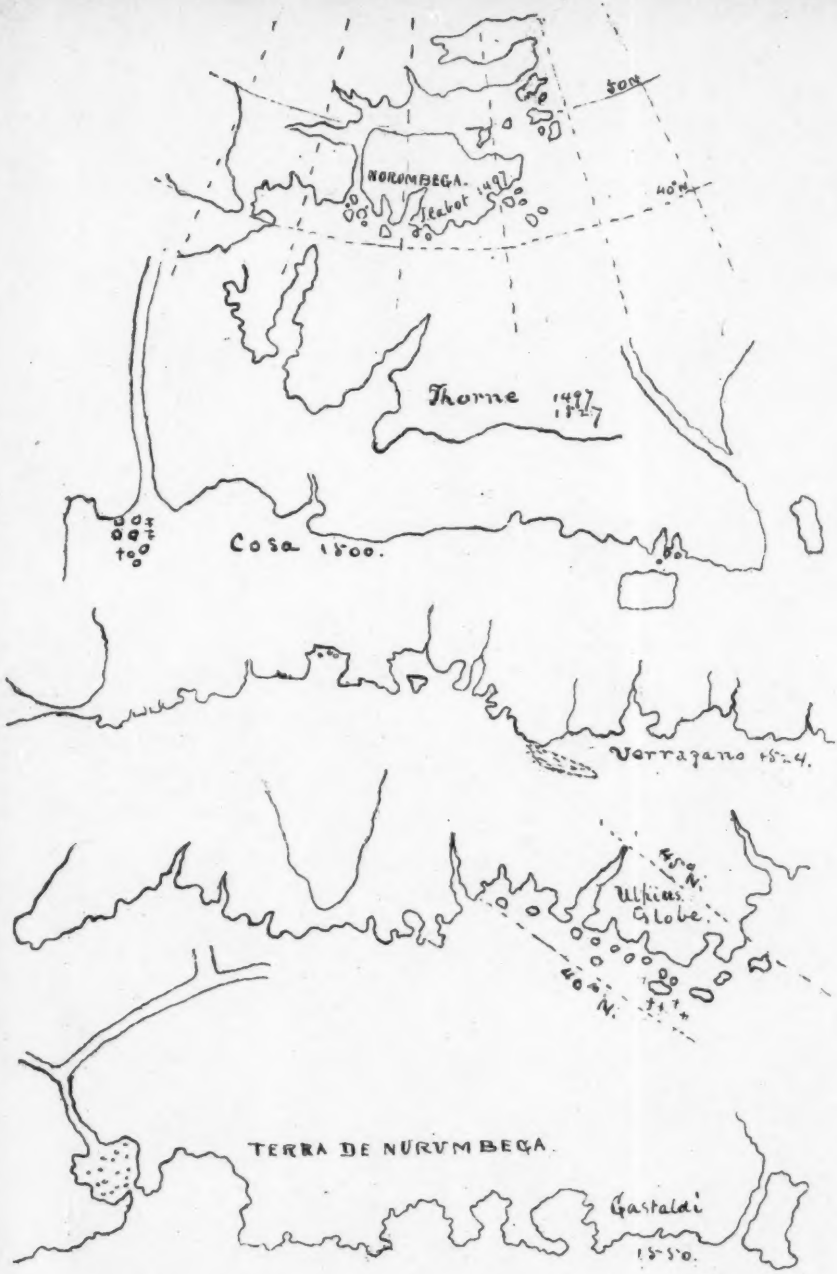
* As lending support to the notion that the name "Baker's," which was attached to the island as early as 1630 (History of Naumkeag), may have been a corruption of "*breakers,*" it may be mentioned that I have sought in vain, in all published lists of emigrants in the Plymouth and Massachusetts Bay colonies of dates earlier than 1630, for the *name of Baker.*

† The claim for the identity of *Claudia* with the islands mentioned, may seem to be impaired when it is seen that Mercator (1569) separates Claudia and Briso (Brisa) widely from each other, and when it is further seen that both Mercator and Wyfliet (Augmentum to Ptolemy, 1597) give *Yla primera*, as distinct from *Claudia*, and both from *Briso.* But I refer for the detailed consideration of this apparent objection to my full paper.

XUM


50°N
NORUMBEGA.
Verrazano 1524.
40°N
Thorne 1527
Cosa 1500.
Verrazano 1524.
Ulpius Globe.
40° N.
TERRA DE NURVMBEGA.
Gastaldi
1550.

XUM

Terra de Nurembergh
Ruscelli 1561.
NOROMBEGA
noromb bega
noromb bega.
merca For
1569.
NORUM BEGA
Wytfliet
1597.
J. Claudii
Champlain
J. Smith 1614.
Winthrop
1630.
United States
Coast Survey 1870.

Early (1498) came the confusion growing out, possibly, of Sebastian Cabot's confounding the Gut of Canso with the narrow strait connecting Anisquam with Gloucester Harbor, which makes Cape Ann an island, and so duplicating Cape Breton and St. Johan and Port Real and Isla Primera (?) and New-found-land at the mouth of the St. Lawrence.

Early, also, came with Ribero, 1529, the name St. Christopher, which clings with great persistence on the maps of the sixteenth century, and in unvarying succession northward, with the bay or river of San Antonio (Jones's River), and Montana Verde (Blue Hills of Milton). South or east of this group is C. de Arenas (or some modification of the Latin for *keel* or *sand*—Cape Cod); north of it, more or less distant, the Bay of St. John the Baptist; and farther on, Cape Breton (Cape Ann). If the circumstance that Plymouth inner harbor is bare, or nearly so, at low tide, suggested to the early navigator the idea of *wading*, and so the use of the name of the Saint, we have a point to which the varying geographical names, within certain limits, may be referred for adjustment. But this I will not pursue further here.

V.

All the above suggestions as to the site of the Norumbega of Cabot must eventually revolve about, and be in harmony with, the requirements of the latitude.

On the map of Lok, 1582, the sketch of Cabot against Claudia lies, as nearly as may be, between 42° and 43° N. This latitude or belt includes the region between the northern portion of the peninsula of Cape Cod and, on the Coast Survey map, a point just north of the mouth of the Merrimack.

On Wytfliet, 1597, it is in about 44°.

On the Spanish Map-a-Mundi, 1527, (in J. C. Brevoort's Verrazano), the region would be between 40° and 47° N.

On Maggiolo's Verrazano (Winsor's America), it would be south of 40°, while on that of Hieronymus Verrazano, it would be north of 45°.

On the Dauphin map, 1543, it would be between 41° and 44° N.

On Ulpius' Globe, between 40° and 45° N.

On Ruscelli, 1561, it is between 40° and 50°. But he includes, as I conceive, within the same latitudes as does Gastaldi, 1550, the principal islands off the coast of Maine from Mount Desert, southward.

On Ribero, 1529, it is between 41° and 44°.

On Vallard, 1543, it is between 42° and 45°.

On the (so called) Sebastian Cabot map, 1544, it is between 41° and 44°.

Thevet, 1556, who claims to have personally visited the region, says, distinctly, it (Norumbegue) "*lies in the 43d degree*" ; that is, between 42° and 43° N.

Ogilby says (p. 138) * * "Norumbegua, most of it, being *under the forty-third degree* of latitude."

Allefonsce, the pilot of Robeval in 1540, who coasted the shores of New England, says (MSS. in Bibliothéque Nat.): "The cape of St. John called Cape Breton" (these are names on Cabot's chart, Lok's map, 1582,) "and the Cape San Franciscane are northeast and southwest, and range a point from an east and west course," * * * * "and there are one hundred and forty leagues on the course, and which makes one cape, called the Cape of Norembegue. The said cape is in forty-one degrees of the height of the Arctic pole. The said coast is all sandy * * * flat,

without any mountain, and along this coast there are many isles of sand and the coast very dangerous on account of banks and rocks." This description agrees well with the region of Cape Cod from Nantucket to Nahant. The Cape San Franciscane may have been Montauk, which is tolerably near to a prolongation of the range from Cape Ann, as given by Allefonsce.

This relation is of interest as determining the identity of the Cape Norombegue, of Allefonsce, with Cape Cod, which is, he says, "through" (in the degree next above) "forty-one degrees of the height of the Arctic pole." Cape Malebar is between 41° and 42°; and the 42nd crosses the peninsula just south of Provincetown, near the extreme point of the Cape.

Allefonsce proceeds to say:

"*Beyond the Cape of Norombegue the River of the said Norombegue descends about twenty-five leagues from the Cape.*"

I cite this testimony of Allefonsce in regard to the latitude of the region of Norombegue, *as his profession was that of pilot; and his testimony unimpeachable;* and he may be fairly presumed to be not more than one degree, at the utmost, out of the way, in a matter of latitude. I cite him, also, because he endorses, in regard to latitude, the statement of Thevet, which statement by itself would, perhaps, be less entitled to confidence.

Within this belt of latitude of 42° to 43°, between Cape Cod and Cape Ann—the Carenas and Cape Breton of Cabot, (the latter the Cape Breton of Allefonsce, as well)—*within this belt, there is but one outline, with an opposing island, to which the terms Norumbega and Nahumbeak apply; and that is the outline of which the Norum—the Nahum—the Tongue—is* SALEM NECK.

VI.

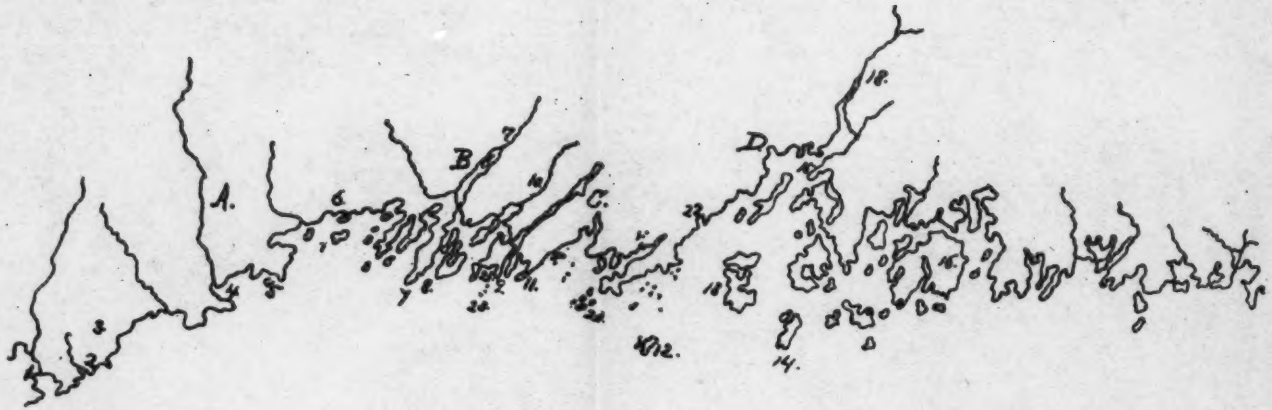
Norumbega or Norumbegue of Champlain.

The suggestion that Norumbega lay in higher latitude rests, or is supposed to rest, on the authority of Champlain. From him and his surveys, Lescarbot and DeLaet—copied by Montanus and Ogilby, derive their authority. Champlain spent three summers in the examination of the New England Coast, and yet did not discover the mouth of the Charles, and only glanced at the mouth of the Merrimack. Champlain was looking for a *town* of Norumbega. He distinctly says he found *nothing corresponding* with the descriptions he had read, although he writes Norembegue along the coast between the Kennebec and Penobscot.*

In studying Champlain's original paper it is seen that he regarded the latitude of Norumbega as only very imperfectly settled; and having learned from Allefonsce [and Thevet?] of a *river* Norumbegue, and having failed to recognize the Charles, and having merely glanced at the

* Rev. Mr. Slafter, p. 107, in his carefully-prepared paper on Champlain, "Winsor's America," referring to the stay and work of Champlain for three summers, says: "The first of these surveys was made during the month of September, 1604. This expedition was under the sole direction of Champlain, and was made in a barque of seventeen or eighteen tons, manned by twelve sailors and with two Indians as guides. He examined the coast from the mouth of the St. Croix to the Penobscot. * * * Sailing up the Penobscot, called by the Indians Pentagoet, and by Europeans who have passed along the coast, the Norumbegue (as he supposed), he explored this river to the head of tide-water, at the present City of Bangor, where a fall in the river intercepted his course. In the interior along the shores of the river, he saw scarcely any inhabitants; but by a very careful examination he was satisfied beyond a doubt that the story, which had gained currency from a period as far back as the time of Allefonsce, about a large native town in the vicinity, whose inhabitants had attained to some of the higher arts of civilization, was wholly without foundation."

XUM


A.
B.
C.
D.
1012.
14.

1. Portsmouth.
2. York.
3. Agamenticus.
4. Kes
5. Richmond Island.
6. Capes.
7. Sphinx.
8. Sagadahoc River.
9. Pemaquid River.
10. Sheepscott River.
11. Pemaquid.
12. Monhegan Island.
13. Pag Islands.
14. Isle au Haut
15. Spurting.
16. Mount Desert
17. Penobscot River.
18. Penobscot River.
19. George's River.
20. St Georges Islands.

mouth of the Merrimack, he assumed, at first, that the site *must* be on the Penobscot, as it was, he judged, the only river considerable enough to be so distinguished. Although in the end he discredits the whole theory and notion on which he at first acted, such was the currency gained through his great name, that, *solely* from his having *looked* for the site of the town on the Penobscot, all writers upon Norumbega since his time have assumed that somewhere on this river the town once existed, and its remains might some day be found.

Dr. Palfrey, in his history of New England (probably from having carefully examined Champlain's narration), ignored the whole story of Norumbega, although the name appears in Capt. John Smith, DeLaet, Montanus, Cluverius, Heylin, Lescarbot, Laudonniere, Ogilby, and others, and is found on a great series of maps,* and even has a place in "Paradise Lost" (liber X).

A glance at the Coast Survey map from the mouth of the Merrimack northward to the St. John's, will be sufficient to show that there is nothing there, even if the adverse latitudes were left out of account, to correspond with the outline on Cabot's map from Cape Breton (Cape Ann) to Carenas (Cape Cod).

The accompanying sketch presents the Coast of Maine from Portsmouth to Campobello, including the region specially examined for Norumbega by Champlain.

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*Allefonsce,	1540–45.	Michael Lok,	1582.
Thevet,	1556.	Judaeis,	1593.
Zaltieri,	1566.	DeBry,	1596.
Ortelius,	1570.	Wytfliet,	1597.
John Dee,	1580.	Quadus,	1600.

—*Winsor's America.*

VII.

Norumbega as a River, Fort and Town.

It will have been observed that the testimony of Allefonsce and Thevet in regard to Norumbega as a *country* had a more limited and specific application than that of most of their contemporaries of the 16th, and successors of the 17th century.

Allefonsce says: "Beyond the Cape of Norumbegue the river of the said Norumbegue descends about twenty-five leagues from the Cape" (Cape Cod). "The said river is * * * * full of isles which stretch out ten or twelve leagues in the sea (Maffit's Ledge, Roaring Bulls, Lizard, Graves, &c.), and it is very dangerous on account of rocks and swashings."

"*The said river is through* (*i. e., next above*) *forty-two degrees of the height of the Arctic pole.*"

"*Up the said river, fifteen leagues there is a town which is called Norombegue, and there is in it a good people, and they have many peltries of many kinds of animals.*"

Allefonsce, whose relation is largely a sailor's disjointed aggregation of instructions for the guidance of mariners, says, for example:

"In going from the said river (Norumbegue), one hundred and fifty leagues, there is an Island which is called Vermonde (Bermuda), which is in thirty-three degrees of north latitude."

And in the next sentence he says, instructing how to find the "Ville"—settlement—of Norumbegue:

"And on the side toward the west of the said 'ville,' there is a range of rocks which extends into the sea fifteen

leagues distant (Marblehead), and on the side towards the north (of Marblehead) there is a bay, in which is an isle which is very subject to tempests and cannot be inhabited (Baker's Island").

Again he says:

"The river of Norumbegue turns southwest around the coast away to the west at least two hundred leagues to a great bay (Vineyard Sound and Buzzard's Bay), which at its entrance is about twenty leagues wide, and at least twenty-nine leagues northward in this bay are *four islands joined together*." (Naushaun, Pasque, Nashawena, and Cuttyhunk.)

Allefonsce had the idea that he had been sailing *along the skirt of an archipelago.*

He says, referring to a bay about Charleston or Savannah, that as he was unable to converse with the natives, he was not certain where the River Norumbegue communicated with the ocean. He also thinks it may connect with the St. Lawrence.*

The latitude (next above the 42d degree), can apply only to the mouth of the Charles River. Regarding the mouth as at the entrance to the Back Bay (so called Cottage Farms Station on the Boston and Albany Railroad), the latitude is 42° 21′ 30″. Regarded as at the entrance to Cohasset rocks, it is 42° 16′.

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* Ramusio says (Kohl, Maine His. Soc. Coll., p. 380. Diego Homem):

"From the Reports of Cartier, we are not clear as yet, whether New France is continuous with the Terra Firma of the provinces of Florida and New Spain, or whether it is all cut up into islands, and whether through these parts, one can go to the province of Cataio, as was written to me many years ago by Master Sebastian Cabot, our Venetian."

Thus it appears that whether or not New England was an archipelago was not settled—at least to the satisfaction of Ramusio, as late as 1556.

The nearest river north is the Merrimack in 42° 49′, and there are *no Islands at the mouth of that river.*

There is no other stream of any considerable length between Boston Harbor and Cape Cod.

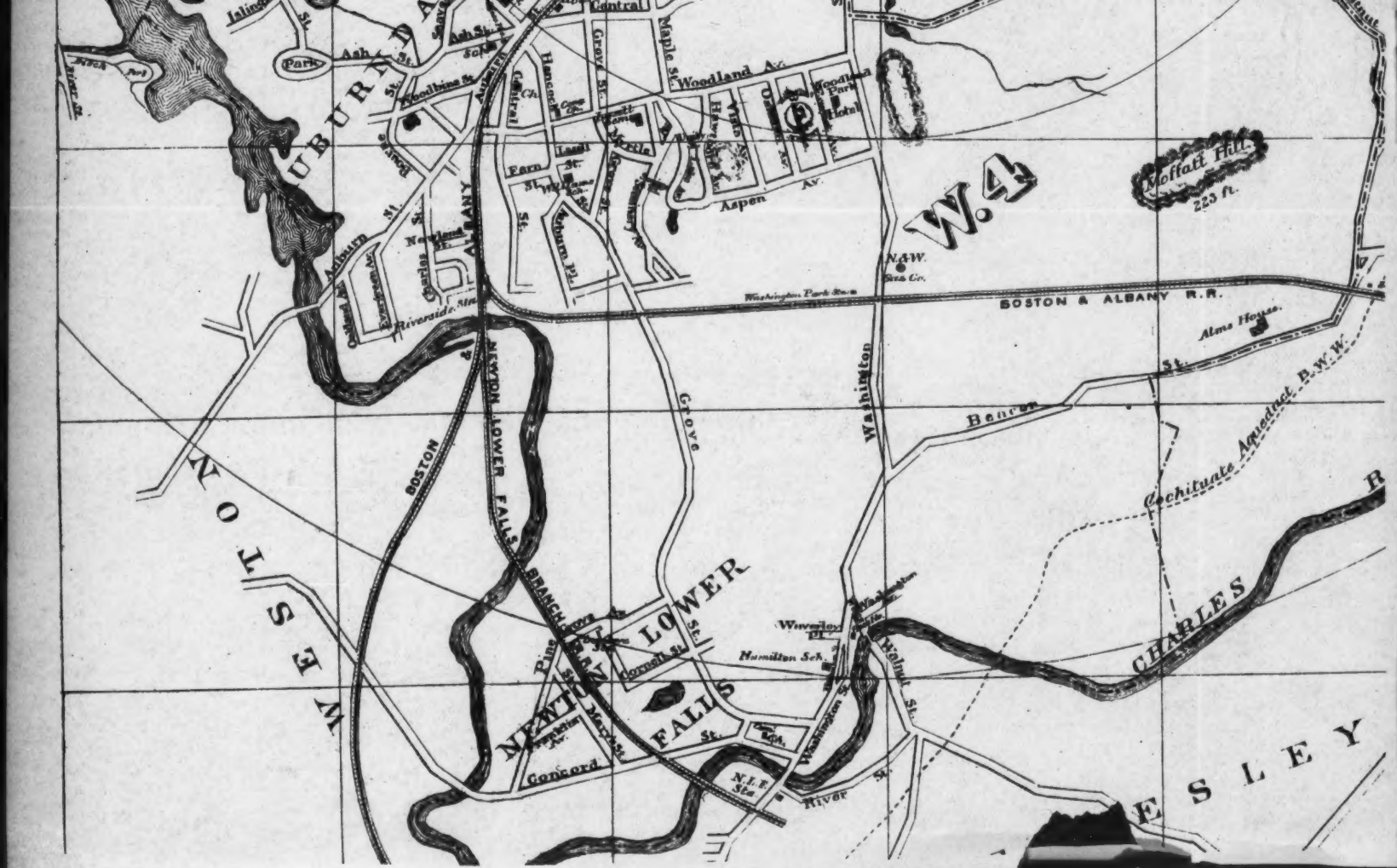
Fifteen leagues up the Charles River there was then, according to Allefonsce, a *town*, or *hamlet*, or *settlement*, called Norumbegue.

Now, we have already seen that this name—Norumbegue—means a *bay* from the bottom of which rises a tongue—a divider—a Norum ; (or it may mean the *Norum* of the bay), and this involves a sheet of water with a somewhat peculiarly scalloped shore. There is but one sheet of water on the Charles where these conditions occur, and that lies between Riverside, on the Boston and Albany Railroad, and Waltham, the city of watch manufacture, two miles to the north. Along the shores of this sheet of water, some mile and a half in length and of varying width, from a few rods to half a mile, there are several Norumbegas—*not towns (or settlements of to-day), but peculiar forms of the shore.* The most striking are on the west side of the river, between the mouth of Stony Brook and Waltham.

I introduce here a map of the river, which, owing to a rare grouping of glacial moraines for some distance above and below the mouth of Stony Brook, presents a most unexampled outline of shore.*

The next author who, so far as the *latitude* is concerned, is endorsed by Allefonsce, is Thevet. Beyond this, Thevet's support is in the *portrait* of the *localities* he has drawn. He says (Dr. Kohl, Maine His. Soc. Coll.):

* What evidences there are of the existence of one or more ancient Indian villages in this neighborhood will be presented in my full paper.


Central
Maple St.
Woodland Av.
Grove St.
Hancock St.
Ash St.
Park
Boylston St.
Auburn St.
Farm St.
Lowell St.
Aspen Av.
W. 4
Moffatt Hill
253 ft.
N.&W. Steam Co.
Washington Park Branch
BOSTON & ALBANY R.R.
Alms House
Beaver St.
Cochituate Aqueduct B.W.W.
Washington
Grove
Boston
Newton Lower Falls Branch R.R.
Pine St.
Comell St.
Hamilton Sch.
Walnut St.
Washington St.
Concord
N.L.F. Sta.
River St.
CHARLES R.
NEWTON LOWER FALLS
WESTON
ESLEY

W35
WALTHAM
NEWTON
Derby
Adams Av.
River
Watchusett & Newton
Lily Point Grove
Lexington
Pine
Auburndale
Webster
Webster Park
Highland
Valentine
Fuller St.
Woodland Av.
Ash
Park
Central
Ashburn
Maple St.
Grove St.
Sherman
Melrose
Stanford St.
Freeman St.
Myrtle St.
Prospect
Brook
Curve St.
Temple
Parkins
Putnam
Chestnut
Alpine
Short St.
Waterdown
Washington
Eden Av.
Davis
Pleasant
Sherman St.
Franklin Sch.
Oak
Elm
Pine Farm School
Water Wks. Pumping Sta.
Waltham W.W.
Ch.
Sch.
Cem.
Gym.
Pl.
Ct.
Ter.
Ave.
St.

"Some people would make me believe that this country (Norumbegue) is the proper country of Canada. But I told them that this was far from the truth, *since the country lies in 43° N.*, and that of Canada in 50° or 52°."

That is, *it lies within the 43d degree*, or between Cape Cod and a point a little north of the Merrimack, or, as Allefonsce read it, *through*, or in the next above 42° N.

Thevet gives instructions to mariners. He says:

"Having left La Florida" (the name first appearing on Verrazano's map, 1527, east of the isthmus described by Hieronymus Verrazano as six miles wide, and which separated the Mare Varrazano—the Atlantic *south* of Barnstable—from Massachusetts Bay), "on the left hand, with all its islands, gulfs and capes, a river presents itself which is one of the finest rivers of the whole world, which we call Norumbegue, and the aborigines Agoncy, and which is marked on some charts as the *Grand River*. Several other beautiful rivers enter into it; *and upon its banks the French formerly erected a little fort some ten or twelve leagues from its mouth, which was surrounded by fresh water, which flows here into the river, and this place was named the Fort of Norumbegue.*

"*Before you enter the said river appears an island surrounded by eight ve.y small islets, which are near the Green Mountains* (Blue Hills) *and to the cape of the islets*" (Cohasset).

On Huth's map of Dr. Kohl (No. 1, of the page of outline charts, Maine His. Soc., p. 315) appears the circle of islets, eight in number, around another island, and the following names, the "*C. de muchas islas*," the "*R. de gomez*," "*de estevan gomez.*" There is just below, or south of the Cohasset breakers, an irregular circle of eight

islands around a ninth near the shore, which is given in detail on the Coast Survey map entitled *Minot's Ledge*, which locality I have visited for the purpose of testing Thevet's account.

"From there," continues Thevet, "you sail all along unto the mouth of the river, which is dangerous from the great number of thick and high rocks (Cohasset rocks, Minot's ledges, the Lizard, Graves, &c.), and its entrance is wonderfully large. About three leagues into the river" (measuring from Cohasset) "an island presents itself to you, and may have four leagues in circumference, inhabited only by some fishermen and birds of different sorts, which island they call *Aiayascon* (Nantasket), *because it has the form of a man's arm, which they call so.*"

Aiayascon is the Iroquois for arm (Gallatin, DeLaet, Montanus), and a glance at the Coast Survey map, remembering that the Indian name *describes the locality* to which it is affixed, will leave no doubt that the point Thevet described was Nantasket. The longer north and south portion was the arm *above* the elbow; the east and west portion, terminating at Hull, was the portion of the arm *below* the elbow.

Possibly Nantasket, to the student of comparative Indian philology, may contain reminiscences of Aiayascon.

The Iroquois and Algonquins were at war, and at this period, as Thevet describes in his account, the Iroquois were temporarily in possession of a part of the territory.

Aiayascon and Agoncy were Iroquois words. Norumbega was an Algonquin word. The name Agoncy means "*the head*," and Thevet seems to think it applied to a rock.

The French had appropriated the name of Norumbega. It had already been extended from the coast outline at

KUM

NORVMBEGA
ET
VIRGINIA.
1597.
NOVÆ FRANCIÆ
Norumbega
Norembega
VIRGINIA.
OCCIDENS.
Hatorask
Papiwbck
Croatoan
Wokokon
Chesapeoc Sinus
Ehesepiok
Comokge
Ocanahonan
Aquascogoc
Cotan
Secota
Pomeiock
Weapomeiok
Roanoac
Skicoak
Buckes de Arenas
B. de S. Juan Bap.
Rio grande
Rio frances
Costa de islas
Bacalaos
Arcipelago
C. de S. Maria
C. Raso
C. de las Arenas
C. de las Islas
R. grande
C. Razo
Tramontana
Ponente
Levante
Mediodia

Æ PARS.
ga.
S. Pietro
Cap. de Breton
R. de Otes
Costa dallada
S. Michiel
Cap. darfso
R. de S. Pietro
Bay de las conchas
R. de la bria
R. Primero
Brifo
Y. de Breton
J. de S. Pietro
J. de S. Juan
J. clauda
Redonda
SEPTENTRIO.
ORIENS.
MERIDIES.
DENS.
320
325
330
39
38

XUM

Salem
throu
All
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by an
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Engl

XUM

Salem over a country stretching, in the notion of some, through many degrees of latitude.

Allefonsce applied it to a cape (Cape Cod). It had been applied to the principal river (the Charles). It was borne by an Indian town (Allefonsce and Ingram), and lastly it had been given to a fort on the banks of the Charles, at the junction of a branch of this river with the main stream.

This location of Norumbega was recognized in various ways with greater or less distinctness on a multitude of maps.

On that of Homem it appears, as I conceive, as a flag near the head of a river, with a display of peaked rocks described by Allefonsce.

It appears, as I conjecture, in the towers and gateway between, of a fort; and near it the cluster of peaked rocks, referred to by Allefonsce, on the Dauphin map of 1543.

At the junction of two rivers the fort itself, or a town, appears on the map of Wytfliet. It is also on the map of Thevet and on Mercator's.

The name or junction is indicated on Freire, 1546; on Jomard, 155?; John Dee, 1580; De Bry, 1596; Quadus, 1600.

The circlet of islands described by Thevet is, perhaps, indicated on Zaltieri, 1566, and Porcacchi, 1572, but most distinctly on the map of Huth, copied by Dr. Kohl.

As a country it was made by some (Laudonniere and others) to extend from beyond the St. Lawrence to Florida.

Smith made the southern boundary contiguous with Virginia, which then included a part of the present New England.

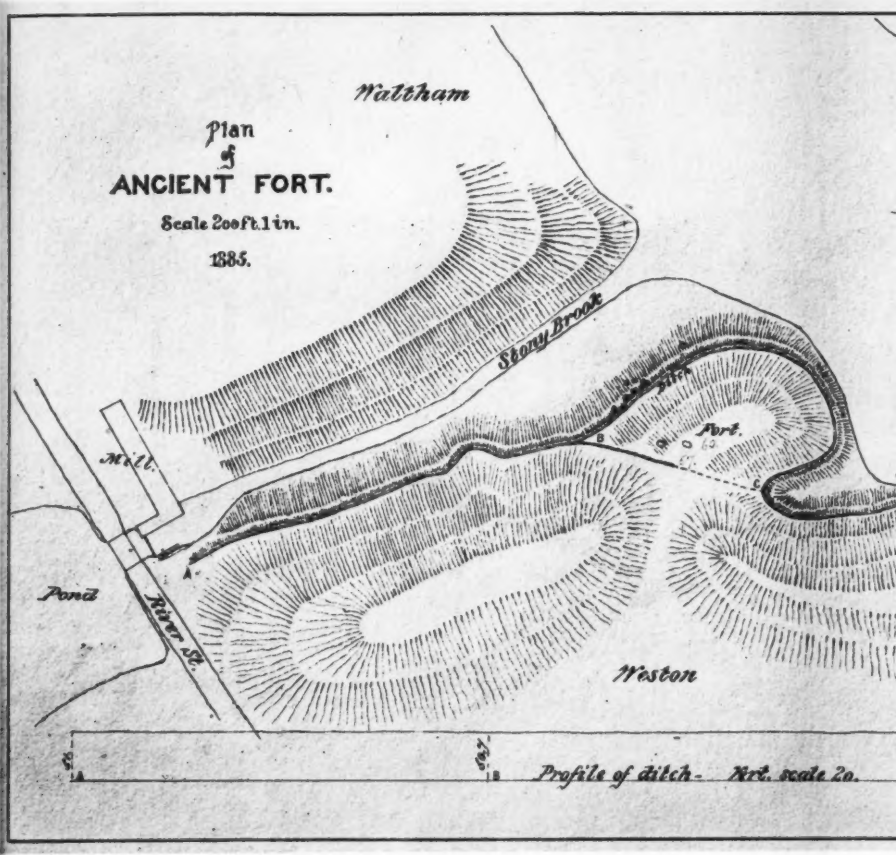
It certainly underlaid the New France of Verrazano, the Francisca of the Ptolemy of 1530, Franciscane of Allefonsce, La Nuova Francia, or La Nova Franza, &c., of Gastaldi, 1550; of Zaltieri, 1566; of Orteleus of 1570; Judaeis, 1595; DeBry, 1596; Quadus, 1600; and Hondius, 1607.

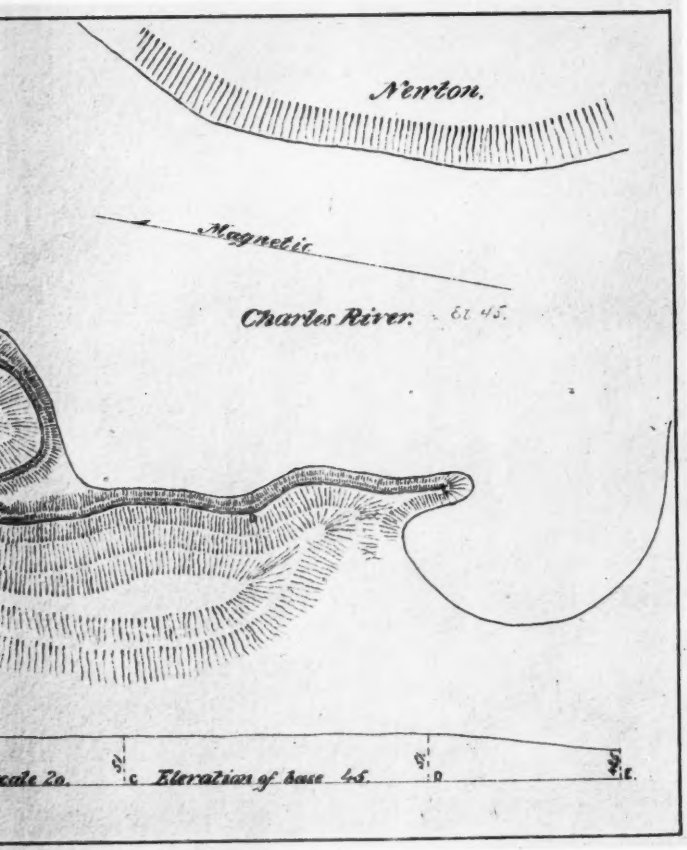
They placed the fort at or near the junction of two streams, which united to form the Rio Gamas, or the Rio Grande, or Buena Madre, which uniformly terminated in an archipelago, sometimes called the Archipelago of Gomez, or St. Mary's, at the entrance to which was the Cabo de Muchas Islas, or Cape de lagus Islas, or Cape St. Mary's, &c.

When I had read these relations, and studied these maps, and compared them with other ancient maps, and those of recent date of the counties and towns of Massachusetts in my possession, and it had become clear to me that they described a locality at the junction of Stony Brook with the Charles River, in the Town of Weston, County of Middlesex, I drove with a friend, from Cambridge, through a region I had never before visited, of the topography of which I knew nothing, except as indicated on the maps, to the junction of Stony Brook and the Charles, *where I found the remains of the Fort* of which I enclose the accompanying survey, made by the Engineer of the Cambridge City Water Works.

The plan sustains the description of Thevet, in regard to the ditch and general features.

The AGONCY of Thevet—the head—a high, isolated, rounded rock, and the traces of an ancient Indian village near are on the line of the ditch, which takes the water from Stony Brook.


Waltham
Plan
of
ANCIENT FORT.
Scale 200ft. 1 in.
1885.
Stony Brook
Mill.
Pond
River St.
Weston
Profile of ditch - Ext. scale 20.


Newton.
Magnetic
Charles River.
Elevation of base 45.

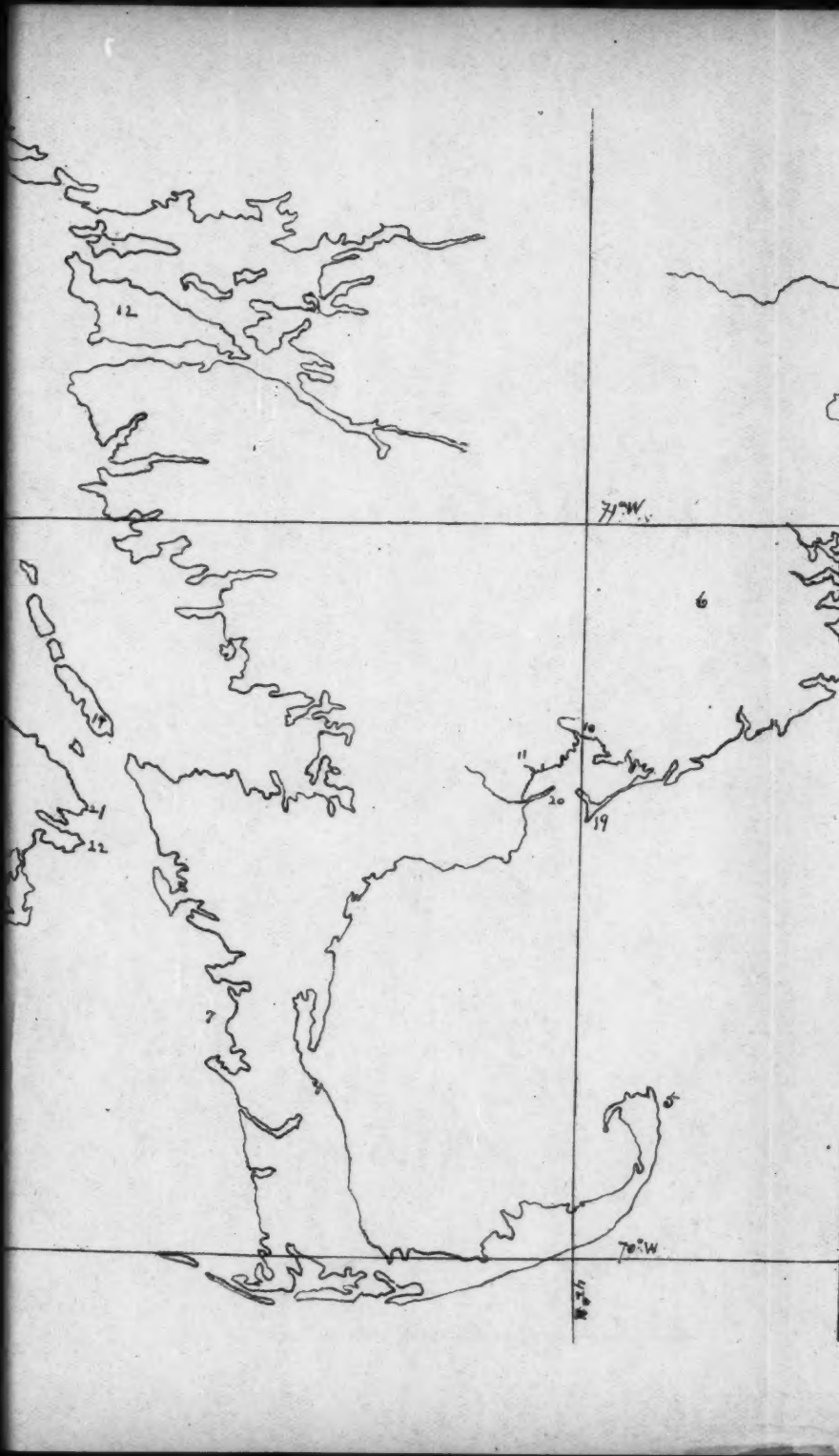
I found, on enquiry, that the ditch has been known to the proprietor from his boyhood. He supposed it had served for purposes of irrigation But, though the property had been in his family for a century or more, he had never heard of its being used for any purpose whatever. The ditch is altogether about 2,300 feet long, of uniform level from the point on Stony Brook where the water was received, to near where it discharged beyond the Fort into the Charles.

I forbear further details at present, both as to the results of excavations made and the attempt to determine the locations mentioned by Ingram, adding simply an outline map of the Coast Survey and the Cabot sketch, and a legend that explains itself.

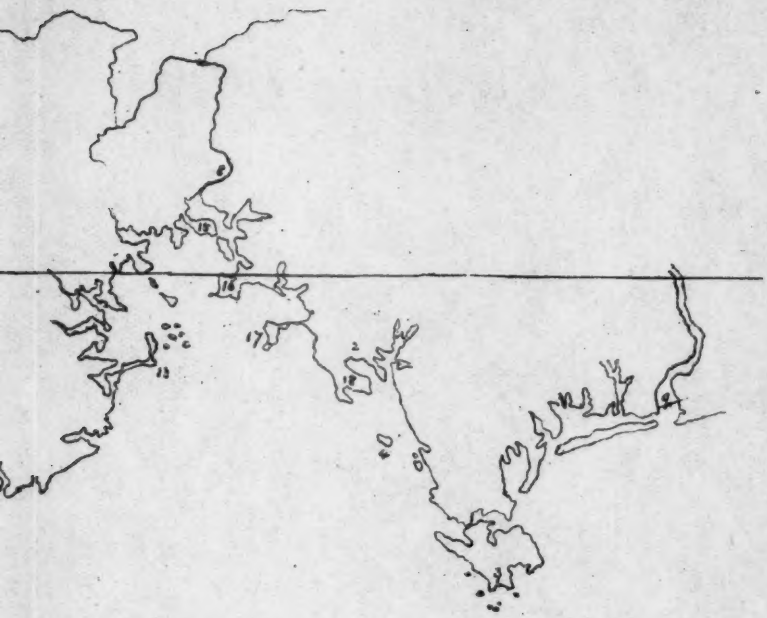
Legend.

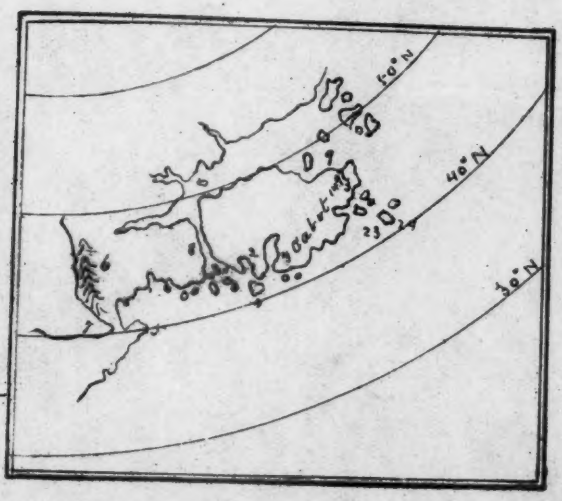
Coast Survey Chart, with some ancient names and points indicated, and identified with modern names and localities.

1. Fort Norumbegue,	Mouth of Stony Brook, right bank.
2. Norombega of J. Cabot, 1497,	Salem Neck and North and South Rivers.
3. Cape Breton,	Cape Ann.
4. Claudia, Brisa, Briso, and Yla Primera.	Baker's Island and Breakers.
5. Carenas,	C. de Arenas, Cape Cod.
6. Montes Johannis,	Blue Hills, Milton.
7. Isthmus of Verrazano,	Neck of Peninsula of Cape Cod, near Barnstable.
8. River of Norombegue of Allefonsce,	Charles River.
9. Mouth of Merrimack?	and St. Lawrence?
10. Plymouth Beach, (outside	of Bay of St. Christopher?)
11. Rio Sanantonio,	Jones River, separating Accomac from the Peninsula.
12. B. Espiritu Santo,	Bay and Island of Newport.
13. Aiayascon,	Nantasket.
14. Na-sha-un,	Naushaun.
15. Sha-um-ut,	Boston.
16 Norman Villa?	Winthrop Point?—Nahant?
17. C. de Lisarte of Cosa,	Nahant?
18. Nahum-keake,	Marblehead and Neck, and bay between.
19. Crossa-ness of the Norsemen,	The Gurnet.
20. Plymouth Beach.	
21, 22. East and West chop at entrance to Holmes' Holl,	Martha's Vineyard.
23. St. Johan of J. Cabot and Allefonsce,	One of Turk's Heads of Smith.
24. Aredonda of J. Cabot,	Another of Turk's Heads of Smith?



XUM





XUM

VIII.

It remains to take from Allefonsce's relation one passage more.* It touches the assumption with which this letter opened.

I directed attention to Cabot's sketch in Lok's map of 1582, in which is an island, the inscription "John Cabot, 1497," the names Norombega, Cape Breton and St. Johan, and the outline of shore against Claudia in latitude between 42° and 43° north.

I have assumed the Cape Breton of Cabot to be the Cape Ann of to-day. The doubt is whether the language of Allefonsce applied to the Cape Breton at the mouth of the St. Lawrence, the latitude of which is in about 46° 15′ north.

Allefonsce says: "Le dict Cap Breton de la mer oceane est *par quarante et deux degrez* de la haulteur du polle Artique."

"*The said Cape Breton of the ocean is through* (that is next to, and above) *forty-two degrees of north latitude.*"†

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* "Je ditz que ce Cap de Ratz et le Cap de Breton et plus de ports en le mer oceane qui est une isle appellée aussi S. Jehan, sur lest Nord est et ouest sud ouest. Il y a en la route quarte vingt lieues. Le dict Cap Breton de la mer oceane est par quarante et deux degrez haulteur du polle Artique.

† The transfer of Cape Breton from latitude 42° 38′ to latitude 46° 15′ was but three degrees and a half; while the transfer in longitude was more than ten degrees. *Longitude* and *distance* were of course liable to be greatly at fault, while latitude was observed to within a degree. This transfer may have been in part due, as already intimated, to mistaking the Gut of Canso for the strait connecting Annisquam with Gloucester harbor, which separates Cape Ann (as an island) from the main land; and also from confounding the eastern coast of New-found-land (the name by which Norombega, the region discovered by John Cabot, was known to Henry VII.), its many bays, indentations of the coast and mountains, with the group of islands from Mount Desert southward. Cape Race is given on the map of Gastaldi almost in the latitude of Cape Breton [Cape Ann], and Mercator (1569) divides Newfoundland into several Islands.

The change may have been made by Sebastian Cabot, who, in the voyage of 1498, seems to have sailed by, without notice, the site of his father's Landfall! Sebastian Cabot is a mystery!

XUM

Now the latitude of Cape Ann on the United States Coast Survey map is 42° 38′ N.

Having placed the Cape Breton and the River Norumbegue and the bay and neck between, of Norumbega, within the limits of the forty-third degree, there is nothing further of assumption requiring authority for support.

IX.

Conclusions.

I submit—

1st. That the site of the Landfall of John Cabot in 1497 has been determined to be Salem Neck, in 42° 32′ north latitude; the Norum (the Neck, to one standing on it) of the Norumbega of Cabot, and the Nahum of the Nahumbeak of Ogilby and Smith. The first land *seen* may have been Cape Ann, or possibly the mountain, Agamenticus.

2d. That the town of Norumbegue, on the River of Norumbegue of Allefonsce, and the Fort of Norumbegue and the village of Agoncy of Thevet, were on the Charles River between Riverside and Waltham, at the mouth of Stony Brook, in latitude 42° 21′ north.*

3d. That John Cabot preceded Columbus in the discovery of America.

I am, very truly, yours,

E. N. Horsford.

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* Middlesex County, State of Massachusetts, U. S. A.

It is proper here to express my great indebtedness to Mr. Winsor, who has kindly permitted me to see advance sheets of the elaborate papers by himself, by Mr. Charles Deane, Rev. Mr. Slafter, the late Mr. George Dexter, Rev. Mr. DeCosta, and others, relating to the early discovery of our shores, in his great work on America; and has further allowed me to trace for my own use in this study, many maps to me otherwise quite inaccessible.

X.

P. S.—I enclose a set of heliotype maps and sketches for your use in reference, all of which will appear in their proper places in my full paper.

Map of Michael Lok, 1582, containing John Cabot's Chart of 1497.
Map of Cosa, 1500. Stevens' copy.
Map of Cosa, 1500. Kohl's copy.
Map of Cosa, 1500. Tracing from Jomard.
Map of Sebastian Cabot, 1544.
Map of Hieronymus Verrazano, 1529.
Map of Maiollo's Verrazano, 1527.
Map of Ribero.
Map of Vallard.
Map of Ulpius' Globe.
Map of Thorne.
Map of Homem.
Map of Gastaldi.
Map of Ruscelli.

XUM

Map called "the Dauphin" map, made by order of Henry II.
Map of Oviedo.
Sketch by Allefonsce.
Map of Thevet.
Map of Mercator.
Map of Champlain.
Map of Lescarbot.
Map of DeLaet.
John Smith's Map. 1634.
Winthrop's Map of 1634.
U. S. Coast Survey Maps and Tracings.
Tracings of various outlines of Naames-Keaket.
Charles River between Waltham and Riverside—part of official map of Newton and surrounding towns.
Survey of Fort of Norumbega.
Numerous tracings of Maps of the 16th and 17th centuries.

Note to page 64.—Instead of "Lescarbot and De Laet, copied by Montanus and Ogilby," read "Lescarbot and others, including Montanus, copied by Ogilby."

LIFE AND SCENERY IN THE FAR NORTH.

BY

WILLIAM BRADFORD.

My purpose in appearing before you this evening is to give you some account of the Arctic regions, particularly that portion of them which I myself have visited. It is almost superfluous to remind you that recent events, the cruise of the *Polaris*, the *Jeannette* and the Greely Relief Expeditions, have renewed interest in this part of the globe, perhaps the most wonderful, if the most inhospitable.

Every person of ordinary observation and intelligence has some appreciation of the beauties and wonders of nature. We are all, except the hopelessly dull and soulless, affected by the rising sun, the starry heavens, the ocean, the mountains, great rivers, forests and other natural objects; but I am about to take you into scenery and show you sights which are strange indeed to most of you. Every American, at least every North American, is familiar with winter scenery, wastes of snow, frozen rivers and lakes, but in our temperate climes winter does not attain the awful grandeur of the polar regions, in which ice mountains and frozen torrents are perennial and the solitudes immense, unbroken, awful. Thought itself is arrested in the presence of a nature of such sublimity. The reality surpasses the flights of imagination. All is novel, impressive, astonishing.

I have visited the Arctic regions several times, mainly for purposes connected with my profession as an artist to

enable me to put polar effects upon the canvas with correctness from actual inspection.

I propose now to take you with me on one of my trips, say, the seventh.

For these trips it had been my habit to charter a steamer for my own use, there being no other mode of progression, and trading vessels being too uncertain in their visits to the thinly settled polar shores. My starting-place was from St. John's, Newfoundland. On this occasion I had been so fortunate as to secure the company and services of a gentleman whose name is known from the Atlantic to the Pacific, Dr. Isaac I. Hayes. He was my guest and associate both for pleasant companionship and scientific research, and I need not tell you his presence was both profitable and pleasant. I had also the company of three other friends.

My steamer was of 450 tons, the *Panther* by name, and some description of her construction may be instructive. You will remember that all sea-going vessels must be strongly built to stand the shocks of great waves, but those intended for use in the polar seas must have more than ordinary powers of resistance to enable them to bear the tremendous strain and pressure of vast bodies of solid ice, which, with an impact of thousands of tons, will squeeze and grind the ship that is so unlucky as to be caught in a "pack" with a force that nothing made by mortal hands seems able to resist; and, indeed, many are the vessels which, despite all care and precaution, are shattered and ground to bits, or sometimes lifted up on end or thrown over to the bursting open of seams and the tearing apart of timbers, as if the strong fabric had been but a child's toy. To return to the *Panther:* her sides were covered with

5-inch plank; outside of that was a sheathing of Australian iron-wood 4 inches thick, then over that from her stern abaft the foremast, she was covered or sheathed with heavy boiler iron. Inside she had three decks, each being supported every ten feet by heavy oak beams. Forward she was built solid up to her forecastle floor and you could saw her bow off 12 feet from her stem, and she would not leak. She was, in fact, one of the staunchest vessels that ever entered the Arctic regions. The crew of the *Panther* consisted of twenty-four as brave and hardy fellows as ever stepped a plank. They were all picked men. John Bartlett was captain, and young as he was—only twenty-four years of age—he justified himself by courage and judgment as well as by his seamanship and other personal qualities that made him as pleasant a companion as he was an able seaman.

Before starting on our voyage it may be as well that I should place before you a chart, showing the route that we shall take.

It was in the month of June that I joined the *Panther* at St. John's, and my first duty was to have a studio fitted up on deck for my own use for the purpose of making sketches, and to prepare a room for my two photographers, Messrs. Dunmore and Critcherson. This done, and some few necessary matters being attended to, we steamed out of the harbor of St. John's, bound north. Soon after leaving the harbor we passed several sealing vessels and icebergs. These vessels are built in the strongest manner, and manned by a set of as brave and daring souls as ever trod the deck of a vessel. The perils they encounter do not seem to daunt nor intimidate them in the least. One year when I was there the sealing fleet was caught among the heavy ice-floes, and about

twenty of these vessels were literally ground to splinters by the crushing ice-fields, and over 1,000 men were forced to flee from their ships and make their way as best they could over the ice hummocks. Such an experience would have unmanned any one not inured and trained to such a life. Newfoundland owes what measure of prosperity it possesses to the seal and cod fisheries.

We passed along the coast between the mainland and Bacaliau Island, where we obtained a glimpse of a fishing station.

Passing Trinity Bay, we bade adieu to the coast of Newfoundland, our first adventure being the hailing of a vessel, which turned out to be a whaler on her outward voyage, an event not momentous or uncommon, but which creates a certain thrill of anxiety in passengers traversing the unmarked wastes of the mighty deep. We passed and left her to pursue her way alone. After our baptism of wind and water by a gale from the N. E., with the usual disagreeable accompaniments for some of us who were landsmen, unused to the roving sea-life, we encountered a lot of icebergs, not a rare sight in those latitudes, but a wondrously beautiful one, with their play of color, movement and variety of outline. Viewing these bergs, the imagination may conjure up almost anything wonderful and strange.

Far away on the eastern horizon was a low-lying blue cloud which some thought a fog-bank, but which others, more experienced, declared to be the coast of Greenland, and so it was—that mysterious land around which cling so many marvellous associations.

Its legends had been the wonder of our boyhood, we had heard of it as a land of fable ; now we saw it in all its stern reality. As the sun went down the air became clearer, and

a bold headland loomed up in the northeast, the veritable Cape Desolation of old John Davis, so named by him in 1585, on account of its barren, blighted, and desolate aspect.

It was a naked rocky Cape, rising to an altitude of 2,000 feet. At its base was a stunted growth of shrub willow, some 30 inches high. It is a curious fact that the growth of these miniature trees gradually decreases as we advance north, until we reach lat. 77° or 78°, and then we can crush with the foot a forest of these perfectly formed toy trees. Passing beyond this latitude, we find again an increase in growth of some 12 inches in height. But let us return to view the land we had sighted.

The air was so pure, the refraction so great, that this bold headland, apparently only 12 or 15 miles from us, was really over 30 miles distant.

When daylight came next morning the *Panther* was enveloped in a fog so dense that nothing could be seen a hundred yards distant, while breakers were heard at times on every side. The vessel was embayed or enclosed in a nest of icebergs or rocks, and the utmost care was necessary. Now and then the form of a lofty berg would loom up like a ghost through the fog, and in the dim, uncertain light it seemed to be on the point of toppling down upon our deck. This state of things continued for three hours, and gave to all on board their first premonition of the prospective danger of the voyage.

When the fog lifted a little the steamer was found inconveniently near to a ledge of rocks, while only half a mile in shore a lofty promontory rose in view. To ascertain where we were and, if possible, to get a pilot, the second mate was sent ashore. In about two hours he came back

and reported that he could find no traces of a settlement or anything to indicate the existence of human beings on this desolate coast. As the sun approached the meridian the fog lifted, and the shore became visible. The boat was once more sent ahead to look for sunken rocks, while the steamer followed slowly.

Finally a snug cove was found where, with both anchors down in thirty fathoms of water under the bows and fifty fathoms under the stern, mooring lines could be taken ashore. This having been successfully accomplished, the fires were banked to be in readiness should occasion require it.

Then, to the relief of all, the *Panther* was at rest. And now we had our first touch of dangerous experience. Being so near the land, a party of the more adventurous was organized for a visit to the shore. After landing they attempted to ascend the mountain, but were forced to return as a gale commenced. It was then found that the vessel was dragging her anchors, so Capt. Bartlett decided to steam into the rolling pack and make fast to an iceberg. Selecting a berg which he thought was of the right shape, he called to one of his most tried and experienced men, and, pointing out the berg to him, ordered him to get ready. This was done by lashing to his arm a stick about two feet long, to the end of which was attached a small grappling iron. Iron creepers were fastened to his boots, and the end of a small rope was made fast to his person for the purpose of connecting him with the vessel. Thus prepared he took his place on the end of the jibboom, keeping his eyes on the iceberg and awaiting, the order of his commander.

The captain kept on his course steadily towards the berg,

and as I stood by his side I could not but admire that noble, self-possessed man, for the situation was one of no little risk and called for coolness and nerve. The captain, selecting a place most suitable, hailed the brave fellow on the jibboom: "Are you ready?" "Ready," he replied, without taking his eye from the berg. Then, under a full head of steam, the *Panther* was forced through the rolling pack and broken ice, called "blue growlers," till she struck and ran her bows high up on the shelving berg. Amidst the noise and commotion of the cracking ice and the wash of the waves, the voice of the captain was heard, "Jump!"

The word had barely escaped his lips when the sailor was seen to leap from the end of the jibboom and land on the berg in the water up to his knees. With a few strides he bounded up the shelving slope, and, selecting a small pinnacle-shaped part of the berg, took his ice-hatchet and chipped a place for his line. By this time the steamer had slid off, but the captain forced her on again, and as she approached, the man on the berg drew in the line from the ship, to which was attached a larger and stouter line, to which was fastened an ice-hook; then drawing the line and hook up he passed it around the place he had prepared for it, and, cutting another place for his ice-hook, was now ready for the *Panther* to swing round under the lee of the berg, which she did into smooth water, and rode out the gale under the protecting ice-cliffs towering far above our heads.

The next day the gale had spent its force; the swell went down and we resumed the voyage towards Julianshaab, sixty miles to the eastward, keeping from three to five miles from the shore, and making frequent detours in order to

avoid heavy packs or crumbling bergs. The scene was wild and strange. A summer's sun was pouring down with an intensity that rendered overcoats superfluous. Away on the left stretched the everlasting hills, bleak, brown and barren, showing no signs of vegetation, their gorges and ravines filled with the impacted ice and snows of past ages, and their summits crowned with a glistening coronet that, in the distance, sparkled with the gleam of frosted silver. Not a breath of air was stirring, and the deep blue of an Arctic sky was reflected in the water, strangely flecked with indescribable icy forms.

None of the bergs around us were very large, but no two of them were alike, and as the *Panther* moved rapidly along between and among them, the scene could be compared to nothing but the quickly changing views of the kaleidoscope. The charm of color was there, too, with all its beauty and variety, from dead white to glossy, glistening satin, from the most delicate to the darkest tints of the emerald, from faint blue to the deepest lapis lazuli. Now some lofty berg would come between us and the sun, and its crest would be bordered with an orange-colored halo, in which prismatic shades and tints burst out like a glory. The wild, rugged shapes of these masses baffle all description. Nothing but the sun-given powers of the camera can do them justice, and even that must fail in part, for until retouched by hand, the glorious phases of color remain unexpressed.

We were all this time on our way to Julianshaab, a point of whose exact location we were somewhat uncertain, and we kept a bright lookout for anything that might furnish some information. Continuing on our course, we saw what appeared to be two nondescript animals approaching

from the eastward. There was much splashing of water around them, and as the distance between us was decreased the dip of paddles was seen. Our nondescripts were two of the far-famed Eskimo *Kayakers*. From their chattering and signs and the frequent repetition of the word "Julianshaab," we made out that our port was yet far distant and not at all in the direction we had supposed. By degrees we made them understand that we wanted a pilot, but now the difficulty was to get them on board.

A *Kayaker* seldom ventures far from shore, without having the covering of his boat fastened closely to his dress so as to exclude the water, which makes it impossible for him to leave his *kayak* while it is afloat, and the *kayak* itself is so frailly constructed, that it is difficult to raise both man and boat from the water without injuring the latter. However, we finally succeeded in getting both the men and their boats on deck.

The Eskimos' first duty was to gorge themselves with food. Pork, bread and coffee made a rapid disappearance into their interiors. After this they were ready for business.

By their direction we altered our course a couple of points, and headed into what seemed a deep bay. Our captain remonstrated and endeavored to insist that the vessel ought to keep outside the land. To this they only returned grave headshakings, and made us understand that "go ahead" was the word, and ahead we went in the evening's gathering gloom; but we were soon stopped by an icy barrier, so closely impacted that it seemed impossible to work through it. However, by dint of hard ramming and driving into the open leads and channels, we managed to get into clear water again.

The ice forms undergo constant and very rapid changes as the steamer moves swiftly through the still waters and stiller night.

There is ample scope for the imagination to picture things of wonderful shape and outlines strange to behold. It may be the resemblance to gigantic men, mountains, beasts, towers, steeples, crenelated castles or humbler cottages by the sea; for all multiform varieties of mass and outline present themselves to the astonished vision, and fill us with admiration of the endless changes in both form and color that are almost bewildering and yet never tire, such is the infinite variety of their sameness.

Everything went smoothly until shortly after midnight, when we came out of a long, narrow passage into a seemingly land-locked basin, from which there was no visible outlet. To render matters worse, this basin contained a number of bergs, so near each other and in such close proximity to the shore that it was difficult to find a passage. We had to get out lines and warp our vessel through and get her head around towards the only available passage-way. At last the word was given to go ahead, and, grazing first one side and then the other against two converging bergs, we shot through clear of all damage.

It was now plain sailing, and about 5 o'clock in the morning our dusky pilots pointed ahead to a narrow harbor and exclaimed, "Julianshaab." We slowed down and in a few moments rounded to. Then on the still morning air echoes rose amongst the hills as our anchor was let go and the cable rattled through the hawse-pipes and we came to a dead stop. The *Panther* was once more at rest.

Our salutations to the slumbering town aroused a countless number of dogs, who sent off their greetings in a series

of protracted howls such as only an Eskimo dog is capable of. The natives came pouring down over the rocks from every direction until a large number was gathered together, when they stood still, seemingly lost in amazement at the unexpected visit. Then suddenly was heard a wild song of welcome and all labor was for the time suspended, while our ship's company, with uncovered heads, stood listening to the melody echoing across the waters—

So wildly strange, so sadly sweet,

that more than one of the party were deeply affected. The words were unknown to us, but the voice of song conveyed an unmistakable meaning and found a response in our hearts.

These people had met us with this melodious greeting because they had mistaken the *Panther* for the daily expected vessel from Denmark which was to bring their winter supply of provisions.

Notwithstanding the error, we were received with a hearty welcome. The curiosity of the simple folk manifested itself in their gestures, and the wonder-stricken look upon their features, as they crowded upon the rocks, could be distinguished without any difficulty.

A few kayaks were soon launched and their occupants paddled round and round the harbor, but no one seemed inclined to come on board. Not a soul of them, I believe, went away after our arrival, but they all remained during the morning, as they began, gazing at the *Panther*. As soon as they detected signs of activity on board they expressed their delight in a very hilarious fashion, calling to each other, laughing and running to and fro, from place to place, singly or in parties, to get a better view of our persons and movements. The little huts from which they

emerged were scarcely distinguishable from the rocks which surrounded them, which gave the impression of coming out of the earth and dropping into it again, like prairie dogs.

Great was the rush when, at last, some of us got into our boat and started for the landing-place. They soon formed themselves into two lines—a hundred or more men, women and children—all talking or laughing and much delighted; and all stood their ground while we marched between the two files, not one of them willing to forego, for a moment, the gratification of their curiosity.

Great men and public characters (leading lawyers and politicians, for instance,) may be able to stand with cheeks of brass and be looked at, but plain men, such as most of us were, found it a trying ordeal. To be gazed at in that curious, inquiring way by so many persons, even though they were half savage, was embarrassing, and I should, no doubt, have felt still more bashful about running the gauntlet under their eyes, had not another sense than that of sight claimed its right of precedence, and with such remarkable energy, too, that all minor emotions were impossible. That other sense was smell. The scent was awful. It was, as the poet says, an ancient and a fish-like smell. The hackneyed line that "the rose by any other name would smell as sweet," had no place in Julianshaab. The people were in their lives almost amphibious, and what with salt water, close habitations and little change of clothing—well, I will quit the subject, for I can't do it justice.

We fled before it, but in vain. It was not only the people, but everything. The odor extended everywhere. The wharf and rocks were strewn with fish, and the very air seemed to be charged with diffused fish.

As for the people themselves they proved to be of many

shades of color, from the tawny hue of the native Eskimo to an almost pure Caucasian complexion with transparent skin and rosy cheeks. Of this latter class there was one girl who stood apart from the rest as though superior to them and yet looked wistfully on, unable to restrain her curiosity. Her hair of auburn hue was abundant and had been arranged with much care. A red silk handkerchief was tied about her forehead and ribbons without number fluttered from the knot of hair which stood upon the crown of her head. Her toilet had evidently been made with the greatest nicety. Her boots were as red as her handkerchief and quite as spotless; her trousers were of the choicest and most shining sealskin, neatly ornamented with needlework and beads, while her jacket, which was of some bright color to match, looked very jaunty. It met the trousers at the hips, where it was trimmed with a broad band of eider down. About her neck she wore a collar of the same material and the beads upon the breast and around the wrists, where there was more eider down, were quite dazzling. Perhaps my description may not be quite satisfactory, as I am not an adept in fashion styles, but to my eyes she was becomingly got up, while she struck me as being very pretty, and much above her surroundings. I approached to speak to her but she ran away; and really that was the only fault I had to find with her. The little savage coquette got behind a house, but took good care to show herself from time to time around the corner, peeping out in very simple and artless fashion.

I believe a genuine coquette, the world over, has the gift of seeming artlessnes. She was not allowed to remain long undisturbed, for following after me came a smart young gentleman from the *Panther*, who immediately proceeded to invest the house, stealing around in the rear of it.

When he had fairly cornered her, she, after the fashion of your charming coquette, did not seem at all afraid, but spoke to him civilly enough; and from that time forward whatever might have been my disposition towards a better acquaintance with this lively maiden of Julianshaab, my chances were clearly gone forever. Her smiles were all for my young friend, and, indeed, I have a strong belief, such was the influence of his engaging manners and the delicacy of his flattery, that she gave him her red boots at their first interview; for I know he had such a pair. While here I met a notable man, by name Peter Motzfeldt. He was a Dane and his name was familiar to me from Dr. Grab's work. Though over seventy he was as lively and elastic as if he had been only twenty, at which age he first took service with the Royal Greenland Fishing Company, in whose employ he had been ever since. He had never returned to Denmark nor did he wish to do so. He had all he could do to look after his family, some of them away hunting.

A point to be visited was the house of the missionary, and thither we went all together. On the way we passed two storehouses, the Parliament House, the doctor's house and numerous turf-covered huts of the natives, the assistant bestyrere, the blacksmith and the carpenter. We then crossed a narrow dashing stream, and were at the church and parsonage. The church is quite a picturesque little building, constructed, like all the buildings erected by the Government, of wood brought from Denmark. The walls are double, the space between being made quite air-tight by caulking, so that the building is easily warmed. Indeed, there is little suffering from cold, even in the severe winters, in any of the buildings at Julianshaab, for besides lining the walls, a further protection is given to the houses,

which are but one story high, by plastering them over on the outside with pitch, which closes tightly every crack and protects them from the weather, even if it spoils the picturesque. The church was in all respects neat and tidy and, black though it was, it was a pleasant sight to see this house of God here in this dreary land, by its very appearance giving unmistakable proof of good Christian work. We entered the pastor's house and fell into a lively conversation about Greenland and its legends, which was so interesting that a new day was breaking above the solemn hills as we returned to the *Panther*.

Our conversation ran mostly upon events of the past rather than of the present. We were on historic ground. Here was a spot which history had made famous, and about which legend had been busy. Brave old Eric the Red had come here nearly nine hundred years ago and with his followers had founded a sort of independent State. This was the land of the famous Norse ruins.

It was at Julianshaab that we saw for the first time the *oomiak*, or woman's boat, a curiosity in marine architecture and made with great cunning. It is about 36 feet long by 6 wide and 2½ feet deep ; and it is constructed without peg, or nail, or screw. The frame is made of round sticks of wood, over which is stretched a coat of seal hide. This hide must be tanned and dried and afterwards thoroughly saturated with oil until it is impervious to water. Quite a number of skins is required for a boat, and the women sew them together so firmly that not a drop of water can find its way through the seams. This skin overcoat is then cut and fashioned to fit the skeleton as neatly as a slipper does the foot. When first drawn on it is soft and pliable, but as it dries it becomes as firm and tense as a drum-head.

When afloat in the oomiak, you can always tell how much water you are drawing by looking through the side of it. This light, tough, elastic boat is propelled with short oars, having broad blades which are tied to the sides. It is always rowed by women, who rise up when they commence the stroke and sit down when it is finished. This process is repeated with every stroke of the paddle.

The kayak, or man's boat, is constructed in the same manner, but is of different shape and model. Both oomiak and kayak are always made by the women, who in this matter are somewhat ahead of their civilized sisters. Fancy our ladies turning boat-builders! But there is no knowing what we can do until we try, and it is possible that a white lady might be almost as good as an Eskimo woman, if she only had the same chances.

It is the custom, in the Greenland ports, to give a ball in honor of a ship's arrival, and the *Panther* had to be received with the usual honors. The grand event came off in the carpenter's shop and of course it was largely attended by the rank, beauty and fashion. The room, about 20 by 35 feet in size, was crowded, and (you will excuse my again referring to the subject) the odor was exceedingly odoriferous. It did not in the least recall the poet's "Araby the blest."

Few of our party could bear it for more than a few moments at a time, but with the assistance of our crew, who were less fastidious, the fun grew fast and furious and was maintained till long after dawn; which statement does not necessarily imply long or late hours, since here we were so near the Arctic Circle that when midsummer is close at hand there is twilight in the sky all night long. The ladies of that region do not wear skirts, and their dress so nearly

resembles the male apparel that it is difficult for the uninitiated to distinguish the sexes. This at first led to some laughable mistakes in the choice of partners, but, generally speaking, the revelry went on without misadventure, the young women acquitting themselves very well, especially in the waltz, schottische and polka. These Greenland receptions differ in one respect from those of a higher civilization. The visitors are the invited guests, but they are always expected to furnish the decorations and refreshments. I don't know that we could introduce this usage, but I present the idea for consideration.

We conformed to the regulation, sent on shore flags, candles, hard bread, beef, pork, and a bag of coffee, which last commodity the native women roasted and ground as required.

Upon going ashore to attend the ball we found the whole population in a state of great excitement, for it was very seldom they had so many guests at once. At the ball itself the women predominated, and they were, of course, arrayed in holiday attire, for Eskimo women are daughters of Eve and desire to show off at their best. Gay colors and bright ribbons were the rule; pantaloons of seal skin, jackets profusely ornamented, and boots made of various colored tanned seal skins, shone resplendent. White, red and yellow were the prevailing tints, each garment being decorated with ornaments of different colors. Many of the younger women were not only pretty in features, but finely formed, with delicately proportioned hands. They were easy in their movements, and, as I have already said, acquitted themselves well upon the floor, their garb of jacket and trousers offering no obstruction in dancing or other free movement.

The band consisted of three musicians, two performing on old fiddles, the other on a drum, manufactured out of an old keg, with seal skin heads ; and if the music was not perfect in time or tune, light hearts and jolly company made up for a good deal. One of our number solicited the oldest woman in the room for a partner and the ball was opened in due form. Age before beauty. Formal introductions were not required and after the first feelings of timidity wore off, there was little intermission in the fun until all went home in the morning.

Julianshaab is not, at any time, a particularly lively place ; but there is sufficient activity during the six days of the week to make the silence of the seventh very marked. Solemnly silent was it, indeed, to me as I landed on the beach and, with my friends, made my way towards the temple dedicated to God among the majestic hills. The people, half savage and civilized alike, were all resting from their labors—the fisherman from his lines and nets, the hunter from his search after game in the valleys ; the sound of the cooper's hammer and the ring of the blacksmith's anvil were no longer heard in the land ; even the voices of the inhabitants seemed to be hushed, as if awed by the presence of that divinely ordained day which it is commanded shall be remembered and kept holy.

It was delightfully calm. The sun gave a pleasant, autumnal warmth to the atmosphere, and altogether it was one of those peaceful Sunday mornings which we enjoy so much at home in the country, when the mind instinctively dwells upon the wonders of nature, and the very soul goes out to the great universal Father, whose dwelling-place is everywhere, and whose presence is nowhere felt more strongly than amidst the solemn grandeur of the cloud-piercing, snow-clad hills.

As I approached the church the only sounds that greeted me were those made by the tumbling waters of the brook, until I had nearly reached it, when the sweet music of an organ rose above the ripples of the glad stream. It was a most agreeable surprise for I hardly hoped to find here in Greenland any such helpful means for uplifting and inspiring religious feeling. How far this circumstance may have influenced me, I cannot say, but certain it is, I would not exchange the memory of the notes of that little organ in the small Julianshaab church, as I first heard them on that peaceful Sunday morning in that Greenland dell, for those of any church organ that I ever heard.

Afterwards when I had taken my seat among the congregation, the effect was not less pleasing as I listened to the voices of the choir and reflected that they were the voices of God's children who, through the instrumentality of Christian love, had been reclaimed from the darkest and most ignorant barbarism.

As sometimes happens elsewhere, a majority of the worshippers was women. They generally appeared to be inspired with a devout feeling, which even the presence of strangers could not disturb, and they sang the hymns in a peculiarly agreeable style.

The Eskimo language is by no means lacking in euphonious sounds, and, as pronounced by a native, is often music itself. The pastor, Mr. Anthon, had caught the accent and pronunciation perfectly, and the entire service, sermon included, was in the common tongue, a language peculiar to the Eskimos and the same with all tribes.

The organ of the little church is of the quaint device of nearly a hundred years ago, having been presented to the Mission by Queen Juliana in recognition of the compliment paid her in the name of the town. As I sat looking at the

upturned faces I could not but reflect upon the great change that had come over the people who subdued the Northmen. Then they were steeped in the worst form of superstition; now the love of Christ ruled in their hearts and they were converts to the Christian faith. And this was the "Land of Desolation," this the Greenland of the past and of the present.

We will now proceed on our voyage. Early the next morning we landed and bade our friends good-bye, after exchanging souvenirs with them. Immediately on regaining our vessel, we steamed out of the harbor on our way north, and were threading once more the winding fiord among the islands and icebergs, rejoicing at having seen a spot of earth so full of romantic associations.

Passing among numerous bergs which line the coast, we had a fine view of the mountains, which rise directly out of the sea, their peaks so pointed as scarcely to admit of the snow resting on their steep and almost perpendicular sides.

We anchored alongside an iceberg, in the way already described, and got a supply of fresh water from a pond in the berg. It is not unusual to find such ponds, formed from the melting of the ice. You will remember all berg ice is fresh.

After a sail of about 36 hours, we made the small islands lying a few miles away from the island of Disco, where we were to stop a short time in the harbor of Godhavn, in Lat. 69°. On account of the various exploring expeditions in search of Sir John Franklin, as well as all the whalers, making this a place of call, it is probably better known to the general reader than any other place in Greenland. The island of Disco itself is about 250 miles in circumference, and very high and rough in its outlines.

It was on a cold, gray, misty morning that we arrived at Godhavn. There had been heavy frosts and a light spurt of snow, and the little town being hidden from view in the gloomy atmosphere, it was not surprising that it should have impressed us rather unfavorably. But this feeling speedily wore off after we had landed.

Disco belongs to the Danish Government, and is under the control of an official styled the Governor. The incumbent of the office when we were there was Mr. Kranup Smith, a young man of perhaps two and thirty. He was married, and his wife seemed to be as well contented with her Greenland home as he was, and there never was a happier baby than the Greenland-born Elizabet whose first anniversary we were hospitably called upon to assist in celebrating immediately after our arrival.

The Governor's house is not by any means an imposing edifice, being of the usual pitchy hue, but it is comfortable and capacious, for the purposes of both a private and an official residence. We were ushered into a suite of rooms, consisting of a parlor, a small sitting-room and a dining-room, by a young Eskimo woman named Sophia, who had lived there some years, and who is well known to all Arctic voyagers. Some prints of fruits and flowers were hanging on the dining-room walls, and the parlor was literally strewn with books, family souvenirs and music. A piano stood in the corner and bore evidence of being much used. Bright flowers were blooming in the windows; and altogether this was a very humanized and comfortable home for these hyperborean regions, in which warmth and comfort are of more value than space or elegance. Better was this than what our *Mayflower* or Rhode Island ancestors had, or even than many a farming or mining settler in the great West can command in these days.

Readers of Arctic narratives will not fail to remember Sophia and her sister, the belles and beauties of Godhavn. Sophia still retained her position of housekeeper in the Governor's residence, and exercised in our behalf all her experience in entertaining guests. Of course there was a ball in our honor and Sophia shone resplendent in all the glories of a Greenland toilet. I have already noticed the delicately formed hands and feet of the Eskimos women; and it must be said that in conversation their voices are soft and somewhat musical, with but a slight guttural sound. In saying, "How do you do?" their salutation is something like "Axumi." In singing their hymns the intonation is of a somewhat plaintive character. Dr. Rink is a leading authority respecting the natives of Greenland, and he tells us that they have a pretty fair talent for writing and drawing, though scarcely any traces of their earlier sculptures remain, beyond a few small images of wood and bone, which have probably served children as playthings. I have in my possession some of their work in pencil drawing and four or five water-color drawings, which have surprised some of my brother artists.

But to return to Miss Sophia, who is, without doubt, the most intelligent young Eskimo woman in Greenland and may, in fact, be classed as one of the aristocracy of that country. She speaks fluently three languages, English, Danish, and her native tongue. I suppose that there have been hardly any voyagers, of the exploring expeditions and the whaling vessels which have touched here, but have been indebted to her for some service and have made her some present in return. She kindly gave me two robes, one of which was made of hundreds of the skins taken from the neck and head of the king eider duck. The neck of this

bird is of a delicate creamy white, while the head includes nearly all the tints of the rainbow. Altogether the result is far richer and more effective than that of any ermine. Just before leaving I made Sophia some return presents for her kindness and she took leave of our party, but came aboard the next day to make an extra final call. She was invited into the cabin, where I received her with all due respect. In our conversation I saw that she was anxious about something, and found out that she was about to be married, and that her visit was to inform me of the fact, and to hint at a bridal outfit, which I rejoiced her heart by giving. This outfit was scarcely in keeping with our notion of a wedding gift, but it fitted accurately with the occasion in Godhavn. It consisted of about half a barrel of pork, nearly as much slush or grease, some condensed milk, canned meats, hard bread, coffee and sundry other articles, and I assure you she was more delighted than any young lady here would be with a hundred thousand dollar dowry. Still she lingered, and finally, with great embarrassment, she ventured to say her mistress had received a new dress from Denmark and she thought she would like to have one. I, of course, acceded to her request. She evidently thought she had discovered a mine and seemed determined to make the most of it, and I waited for her next request. The last wish was that her longing eyes might behold—a *crinoline*, of which she had heard faint rumors. Oh! feminine weakness! The idea of a crinoline in Greenland!

The Greenlanders or Eskimos are not partial to too much Government, yet the Danish rule is satisfactory to them, for they have a voice in their own affairs. There is a prohibitory act which is enforced in all the settlements, and

which I cannot refrain from mentioning. It is the commendable policy which absolutely excludes that villainous "fire water" that has played such a conspicuous part in the demoralization and destruction of our own Indians, and not a few others who are not Indians.

Once a year only are the people allowed to smile through the bottom of an empty glass.

This is on the king's birthday, when every man in Greenland is allowed to march up to the Government store-room, there to receive, each in his turn, a glass of schnapps, which he drains to the health of the mighty Nalegaksoak who occupies the Danish throne.

The women are excluded from this festive privilege; but a man may kiss his wife, just when he pleases, without offense to anybody; and, while in the act, he may drop from his own capacious maw, like the cooing dove that feeds its mate in the cote, whatever portion of the king's bounty he may feel inclined to spare, and nobody be any the wiser for it. Although the Eskimo is not a particularly ceremonious individual in his daily life and habits, he sometimes condescends to take his wife out for a call upon some neighbor. They go in a kayak, the boat used by the men. The wife lies down flat behind the man and she must be very careful not to move, or she would upset the frail craft. In the hole where the man sits he puts the little child, if there is one, and manages to keep it in position. If the water is a little rough the woman gets her hands and face washed, an event less frequent in that frigid clime than it is with us.

The Eskimo kayakers are very expert and perform some feats which astonish all those who see them. One feat in particular seems almost incredible, but, having repeatedly

witnessed its performance, I can vouch for the fact. The man turns a somersault under water while seated in his boat, as one of our acrobats does on land. With a cord the kayaker draws the edge of his hood so close to his face that not a drop of water can pass between; his sleeves are closed in the same manner and the boat is made water-tight by tying his jumper or seal skin jacket over the raised edge of the hole in which he sits. Thus prepared, he makes with his paddle a wonderfully rapid movement, with a sharp metallic sound as the blade passes through the water, and instantly the boat turns over, the man disappearing beneath it. His paddle is seen for a second and then is gone. As you watch with breathless interest, the paddle reappears making the same lightning-like movement, then the man rises and complacently steers towards the spectator, looking at him with a smile through the salt water that runs off his swarthy face.

This is not much in the description but it is a great deal in the doing. A common swimmer may dive under the water and come up at another place, but the Eskimo boatman must counteract the buoyancy of his air-tight *kayak* bottom upwards.

Another feat is for one man in his *kayak* to force both himself and his boat out of the water and over another *kayaker*, as he lies broadside on the water, as a horse leaps over a fence.

Even a more astonishing feat, to my mind, is the ability to ride out the heaviest gale of wind in safety in his frail skin boat provided only that he does not lose his hold on his paddle; should he do so, however, he would capsize immediately and drown. His paddle is his balance pole; let him part with it for an instant and he is gone.

A small boy, who may be called an Eskimo "Wide-Awake," was a good subject for a likeness, but I was not able to take his photograph without considerable trouble, for he seemed so doubtful of what my intentions really were, after being told that I wished to "take" him, that he secreted himself and it was only after a long search that he could be found. Then he was so terrified and cried so bitterly that his face was not an object to be coveted for a photograph. However, several applications of molasses, applied by my finger to his lips, were as efficacious as Mrs. Winslow's Soothing Syrup, and he finally consumed a pint without my aid, and the picture was secured.

Another little fellow might have been called "Blubber-Chops." His clothes were in a state that would lead you to think they had not been taken off since they were first put on. This boy could easily dispose of 7 or 8 pounds of blubber, a surprising meal even among the Eskimos, who are all brave feeders. There was an unusual abdominal development about Blubber-Chops which excited our curiosity, the rather that it moved to and fro continually and at last mounted towards his neck, when we saw the sharp ears and bright eyes of a young blue fox emerge and turn to survey the strangers.

Leaving our Godhavn friends with regret, we once more turned our bows northward to cross the Arctic Circle and see the midnight sun. This opened another existence to us. We were in a Summer of continuous brightness. For days and weeks together lamps were not thought of. It was a new heaven and a new earth; no morn, no noon, no night, no time for turning in or turning out. We lived and moved by the clock, not by the sun or the sky.

We crossed the Arctic Circle in a fog, and what a fog! I verily believe there never was such a fog. We steamed along slowly for about 24 hours, when it cleared off and we emerged out of a cloud region into one of dazzling brightness. We glided on among the icebergs in view of magnificent coast scenery, and here it must be said that, in this region of ice and snow, the scenery is never tame or uninteresting. We passed under the gloomy, cavernous Black Hook, and then near the stupendous cliffs of the mainland, which, cut off by deep gorges, seemed like old time-worn columns, holding up against the sky a vast white entablature—the great ice sea of Greenland.

Then we passed beneath the noblest landmark of the coast, a cone-shaped mountain rising from the sea, which we had seen some 60 miles away. With helm a-port we steamed in on the south side of the mountain and entered a narrow, winding fiord close beside its base, as the sun was dropping his earliest rays down upon a silvery thread of ice-encumbered water, that wound between cliffs of unparalleled magnificence, rising on our right and left to from three to four thousand feet in height. We pushed on towards our place of destination, a truncated cone standing in the middle of the fiord before us, and right well did we afterwards come to know this same cone which is called Arsut Rock.

Its height is about 2,500 feet. The sides slope only a little from the perpendicular and from our position there was no perceptible break in the line of the cliff to an altitude of nearly 1,500 feet. We hauled the *Panther* alongside an iceberg and made her fast. How we rejoiced at the opportunity to get out of the ship for a time! A landing on the iceberg was easily effected, and we ran about over it as if it had been dry land. Satisfied that this was a good

place for birds I directed the Captain to take the boat and row towards the cliff, which, by a strange optical illusion, appeared to be only a very short distance from us. To our amazement we rowed for twenty minutes before reaching it. The sight was grand.

The cliff rose up nearly half a mile above our heads, and below us its image was reflected in the clear, bright waters. As we drew nearer we observed that the surface of the cliff was broken by regular steps, and presently we heard a murmuring sound like that of distant falling waters.

When we were fairly under the cliff this sound increased in volume and became so loud that we were obliged to elevate our voices to make ourselves heard. The noise was caused by millions of birds which covered the entire surface of the rock. They were so numerous that we soon tired of shooting them and returned to the *Panther*.

The next day was calm and pleasantly warm and we prepared to enter the wonderful sheet of water called Arsut Fiord.

I specially desired to penetrate to the head of this fiord and secure some photographs and studies in color, for I could not ascertain that any views had ever been taken of a Greenland fiord.

Learning from a half-breed that it would be dangerous to venture up with the *Panther* on account of sunken rocks, we left her, in two boats, passing between Arsut Rock and the bold, barren cliff at the right, which is over 3,000 feet high. As the view opened up, the high, precipitous, naked rocks, which lined the fiord on each side, extending up for the distance of about seven miles, suggested to me an Arctic Yosemite.

It was almost an exact reproduction in outline, and wonderfully like it in its geological character.

We carefully scanned the rocky cliffs with our glass and saw unmistakable signs of previous glacial action, which is remarkable, as there is no glacier within five or six miles of these cliffs. On the left was a precipitous wall 4,000 feet in height, similar to El Capitan in the Yosemite Valley, while on the right was another which in form and height would readily suggest Glacier Point. There is the essential difference, however, that this fiord is filled with water, whereas the Yosemite is land. There are two other fiords resembling this one within forty miles south.

Having obtained some oil and several pencil studies, with some fine photographs, we took our departure and proceeded slowly down the fiord, arriving on board the steamer at about 11 o'clock in what anywhere else would have been night, but here was only afternoon.

The next day found us steaming along the coast, bound for the colony of Upernavik. We passed around the base of this big mountain, which is known as Kresarsoak by the natives, but was named Sanderson's Hope by old John Davis in 1585, and two hours later were at anchor. Before us was Upernavik, which enjoys the preëminent distinction of being the most northern spot of all the world where civilized industry is carried on. It lies in Lat. 73° 35′. Landing, we proceeded directly to the house of the Governor, C. N. Rudolph, who received us with the greatest hospitality. We soon forgot the desolate surroundings as one would forget the desert in the wild flower that he finds growing by the way. The Governor's house was snug and comfortable. Two children and a kindly, gentle wife comprised the family, and after seeing them we needed neither the fragrant flowers growing in the windows nor the excellent dinner to convince us that we were in a home as happy as it was refined.

A tender love of flowers is a special feature in Greenland life. I never saw a Danish house without them. The flowers would not bear exposure to the open air throughout the entire length of any single day, but men keep them safe behind the glass, and nurse them as they nurse within their hearts the kindly ties that bind their lives and memories to sunny skies and summer gardens far away.

These flowers were especially interesting to me on account of their peculiar history. The seeds from which they were raised were brought to Julianshaab by a Quaker missionary, to be distributed to the different settlements by the Eskimo couriers and other means of communication. Two years elapsed before any of them reached Upernavik, after a journey of 1,200 miles through this desolate region. They were planted by Mrs. Rudolph in earth brought from Denmark and tenderly nurtured until they had blossomed into the beautiful flowers which I saw. Mrs. Rudolph presented me with a few of them and related their history, in the course of which I found that the missionary who had first brought the seeds to Greenland was a dear friend of mine. I carefully preserved the flowers and had the pleasure, the following year, to present them to this good missionary, in England. Thus we see the seed that he distributed was emblematical of that work to which he was devoting his life.

While sitting at the table partaking of this amiable couple's hospitality I glanced through the window in an opening among the plants and there beheld a scene never to be forgotten. It was near the hour of twelve in the afternoon. The rugged, cold, barren rocks, the calm waters of Baffin's Bay, as smooth as glass, hundreds of

icebergs of every form and shape, moving or stationary, were all bathed in the light of the midnight sun which seemed to glorify everything it rested upon; the sky was bright and soft and strangely inspiring like the sky of Italy, and the bergs had wholly lost their chilly aspect and, glittering in the blaze of the brilliant heaven, seemed in the distance like masses of burnished metal or solid flame.

And now we pass from a scene full of cheerfulness to one suggestive of sorrow and resignation, and visit the burial ground of Upernavik. It is a sad place of sepulture. It lies on the hill-side above the town and is dreary and desolate beyond description. It consists of a series of rocky steps on which lie, covered only with piles of stones, a few rude coffins—mournful resting-places of those who sleep their last sleep among the barren hills of Greenland. The manner of the burial is of the simplest. The body is placed in a rude coffin or, if boards are not to be had, is wrapped in skins and laid on the surface of the ground. Then a wall of stones is built around and over it, some four or five feet thick. Sometimes there are deposited on the grave articles belonging to the deceased; if it be a man something connected with the hunt, if a woman some implement of domestic use. No matter how much any article of that kind might be wanted, no one would ever think of removing what is deposited on a grave. But should a foreigner, visiting this last resting-place, remove such a relic and leave there something of equal value to show that he did not intend to steal, then the Eskimo's scruples would be removed and he would take the substituted article as soon as he saw it. In this ground are crosses erected over the bodies of persons who belonged to

some of the whalers on exploring expeditions. One of these, set up by Dr. Hayes, marks the grave of one of his crew, seaman Carruthers, who died here while the vessel stopped on her way north. There is one event in the daily life of Colonibestyrere Rudolph which must interest and surprise every one. Every morning, as he sits down to his breakfast, his Eskimo servant hands his morning paper from Denmark for his perusal. I can almost hear the reader say: "What a falsehood!" but such is the fact. He is served with his daily paper, but it is just one year old. The yearly file is sent him from Denmark and he allows himself just one paper a day, and the news is as new as if it had happened yesterday. Most impressions are relative.

We met here a well-known individual, Hans Heindrick, who had served as hunter and dog-driver for several Arctic expeditions. He was with Dr. Kane in the *Advance*, then with Dr. Hayes in the *United States* and Captain Hall in the *Polaris*. It was through his skill in hunting that Dr. Kane's party were saved from starvation, and he was the hero of a most thrilling incident in connection with the loss of the *Polaris* near Littleton Island.

He is married to a native woman named Merkut, and his baby rejoices in the euphonious name of Pingasuk. Hans has been taught by the missionaries to read the Bible and sign his name.

We now take leave of Hans, Mrs. Hans and the little Hanses and look at another character. This woman is called an angekok, a witch or sorceress. She formerly performed incantations over the sick or dead, and surely, if ill-looks ever had anything to do, as they always seem to have had, with the general make-up of a witch, she is

entitled to be looked upon as the mother of them all, for a more repulsive-looking being never walked in darkness and conspired with the evil one. Yet this monster had a child, and its innocent baby face did not exhibit any evidence that it was conscious of its dangerous parentage, but it sucked its fist as contentedly as any other baby.

Having seen some of the inhabitants we will now look at their *igloe*, or winter hut. It is made of turf and rocks. The walls are 2 or 3 feet thick and it is 12 by 15 feet square. The entrance is through a door at the end of a passage-way about 12 feet long and 36 inches high. In entering it you almost crawl on your hands and knees. Passing in to where you can stand erect you are always cordially welcomed, and while one of the women is preparing a cup of coffee for her guest we will listen to a native song. Although most of the music of the Eskimos is of rather a plaintive character, one is occasionally found which is quite the reverse.

The walls of the *igloe* are lined with seal-skins, and their only fuel is dried moss and blubber, which is burned in an open dish made of soapstone, called a *kotluk*, and by means of this they slightly parboil their food of walrus or seal. Another of their dwellings is called a *toupek*. It is made of skins, and is used in the summer during the hunting season for camping, on their journeys up and down the coast. They sleep in the low part in the rear, on a frame-work covered with skins.

Here at Upernavik it was that Dr. Kane first heard words of welcome in his own language from Governor Rudolph, after his retreat of over 450 miles from the abandoned *Advance*. Here all the vessels of the different exploring expeditions, as well as the whalers, stop and leave their

letters containing messages of love for the dear ones they have left behind in their native land.

We bade our dear friends, Gov. and Mrs. Rudolph, adieu and promised them a longer visit on our return. We were soon on board the *Panther*, and, as we stepped on deck, she once more headed out of the harbor. As the last glimpse of the little church was shut out from our view, many a prayer was silently offered to Him who, in His infinite mercy, protects and guides us on our course, and we prayed Him to vouchsafe us a safe return to civilization and to our dear ones at home.

And now we have the *Panther* under a full head of steam, forcing her way northward, through a group of icebergs, along a coast which constantly increased in interest as we advanced.

Fifty miles north of Upernavik we steamed into the harbor of Tessuisak, which boasts of one solitary house, the nearest habitable house to the North Pole.

It was late at night when we dropped our anchor, but the photographers got out their apparatus and, as the clock struck twelve, they made a picture of it—*photographed by the light of the midnight sun!*

Here Jensen (who was the dog driver and interpreter for Dr. Hayes on his last expedition) resides, with his little family.

We had scarcely entered the harbor when we saw a whale-boat, manned by a swarthy crew of skin-clad men. It was soon alongside. The man in the stern proved to be Jensen, who climbed to the deck and instantly recognized his former commander, Dr. Hayes. Putting his arms around his neck, he kissed him, while his eyes were filled with tears. The joy of the meeting was mutual. We

steamed into a good anchorage, went on shore, and called on Jensen's wife, who entertained us with true Danish hospitality. There was something indescribably sad to me in the dreadful isolation of this family. It is worse than loneliness, for the few filthy Eskimos, with their packs of howling, vicious dogs, and their general wretchedness, cannot give companionship to a woman bred in Copenhagen, nor to the three children whom she nurtured with the carefulness of a Christian mother. The loneliness of that prison-house to those children, when winter has come, was a painful thing to contemplate. But then the wife made no complaint; she seemed cheerful, and may have felt so. Hopeless, indeed, to her this life of toil, anxiety and suffering, unless Heaven has given her some measure of bliss utterly beyond our power of appreciation. Alas! how little men really know of the sacrifices women make for them!

Jensen showed us his dog-team ready for a journey. Each dog has a trace made from skin, and these are fastened together in such a manner that all can be instantly liberated. The dogs travel spread out like a fan, the leader being in the centre, and are guided by the word of command and a whip. The whip has a handle 30 inches long and a lash, made of skin, from 15 to 20 feet long. An Eskimo handles it with wonderful skill, being able, with a stroke of the lash, to cut off the ear of an unruly dog.

On leaving I made up a store of good things for Jensen, and, bidding them good-bye, bore away from this most northern house in all the world, and the last glimpse we had of Jensen from the masthead he was still waving us his adieux.

We entered an open lead, which looked very favorable

for quite a distance. This was one of the scenes which every Arctic voyager delights to look upon, and we crowded on all steam in order to take advantage of the opportunity. The thermometer indicated 50° above 0. The Captain was aloft in the crow's nest, looking eagerly and anxiously ahead, fearful that the lead might close; but on we went, and entered the ice-pack of Melville Bay, passing through an open lead and near an iceberg which was evidently liable to disintegrate. We slowed down and passed the berg at a moderate rate of speed, as a matter of precaution, for it would have taken but a little jar or wave-commotion to cause it to go to pieces; and woe to the vessel should the rupture happen when it is near. Sometimes we were beset by the ice-fields, being once or twice almost forced on an immense berg, and effecting our escape with great difficulty. This ice navigation is never free from hazard, and nothing can be more treacherous than the movements of a pack.

Through an open lead we entered a small body of open water for the purpose of getting a view of a beautiful berg. I landed on the ice floe, at just the right distance and succeeded in getting a very fine picture. This berg appeared to be in two pieces, but we found they were connected together under the water. The space was over 75 feet wide and deep enough for us to steam through, as we had done. I have seen arches and caverns in bergs, some of them high enough to have admitted a vessel. This berg, from its great beauty, we named the "Glory of Melville Bay." We were now surrounded, as far as the eye could see, with an interminable ice-pack, and while forcing our way along through the ice, which was about 2½ feet thick, we came to this immense, lofty berg, which was about 275

feet high. The large arch which pierced it displayed the beautiful color always seen in overhanging portions of the bergs. It reminded one of a castle, a fit abode for the Polar Ice-King.

Still heading northward, we arrived at the Duck Islands, so called because of the number of eider ducks found there.

Landing upon one of the islands we made our way to the cliff, known to voyagers as the "Whalers' Look Out." How grandly the mountains and glaciers of Greenland loomed up on our right! How splendid was the sea around us, speckled with ice, with here and there a dark, rocky island amid the general whiteness! How tempting Melville Bay ahead, with its interminable pack!

When we returned on board the chain was clanking in the hawser-hole, the anchor was aweigh and the propeller at work and soon the *Panther* was again steaming northward in the calm evening.

The sun was in the west a good way above the horizon and a pleasant glow was over sea and land. We steered in a northerly direction for Wilcox Point. Eastward from this point we observed that the coast trended some miles to a mountain called the "Devil's Thumb," and as we saw it, it had very much the appearance of a thumb projecting vertically above the hand when it is placed edgewise upon a table.

Why the Devil's Thumb, rather than the thumb of some more respectable character, is puzzling. The sea here is very perilous and no part of Baffin's Bay is so much dreaded as this locality. It is rightly named "Bergy Hole." We entered the ice fields through an open lead or lane of water which, as we proceeded, gradually narrowed.

The first officer, who was aloft, kept a sharp look-out, and it was soon found that our lead was a "blind" one and we were coming to the end of it. The ice was jammed tightly everywhere and word came from the look-out in the crow's nest that we must go back. "Is there no opening anywhere?" asked the captain. "None; but the ice looks weak on the port hand." "Keep her for it and put her in," roared the captain; and down we bore upon the ice, the rakish bow and stem of the *Panther* well out of the water, and looking defiant, as if it were a matter of no kind of consequence to her what amount of ice lay before her. On we went, still rushing towards the ice at full speed, the screw grinding fiercely and making the vessel tremble in every timber. It was soon too late to check her headway, even if the captain should have desired it. To wheel round now would have been quite impossible. We braced ourselves for the shock that was coming, every man catching hold of something to steady himself with. C-r-r-r-ssh! the solid iron cut-water of the *Panther* has taken the ice. She cuts into it, slides upon it, and crushes it down; she rides up again, and sinks and buries herself her full length in the body of the floe; but still she slides up once more and crushes further on, although going slower now; and then she stops and settles down to her proper level, and the groaning of the ice seems to be a cry of relief from the noble vessel, which only wants a little breathing time before she begins again. Pretty well for a beginning; and no one now doubts the *Panther's* ability. The captain tells the officer in charge to keep her at it; the screw is kept revolving and the *Panther* is again pushing in among the ice-floes and forcing them asunder. The jar and steady pressure have their effect; the floes are set in motion, the crack widens and we grind through into clear, open water.

This bold dash gave us a free passage northward.

All eyes were now strained and all glasses were doing service in search of bears. It was a midnight long to be remembered. Just above the horizon, as seen in the superb view before you, glowed the midnight sun, scattering everywhere a flood of golden light. The icebergs, the great glaciers, the cavernous old cape, towering above our heads, and the more distant peak of the Devil's Thumb, were bathed in its bright effulgence.

Slowly the gorgeous fiery orb approached the horizon. I cannot give you any adequate idea, in words, of the effect of this scene of this midnight sun, which has even served to give a title to this interesting portion of the globe.

The Land of the Midnight Sun!

You may imagine yourselves watching this sun (the same sun we see here, and yet how different) as it lingered, seemingly, for a moment just above the horizon.

Fifteen minutes later we saw it in this position, and (in defiance of all preconceived notions of its proper course) it skirted the horizon, from left to right, for about thirty minutes, without either rising or falling, and then commenced to mount towards the zenith. And thus was another day commenced.

I was charmed with the scene, and was trying to make a sketch of it.

Suddenly something in the distance attracted my attention.

Looking more carefully I saw it was an old bear and her two cubs, slowly and cautiously making their way over the ice towards the *Panther*. They came forward drawn by curiosity, to study carefully the vessel, stopping occasionally, the old one raising her head and snuffing again and again, trying to satisfy herself whether she was safe.

The steamer was but a black curiosity to them, and we were well pleased when they manifested a disposition for a closer acquaintance.

The old mother led off, and the two young ones came shuffling along beside her, very slowly and cautiously, edging away from the vessel's stern, manifestly for the purpose of coming as far as possible around to the leeward of us.

She seemed fascinated with the steamer, and her curiosity got the better of her discretion.

Meanwhile, the little ones were cutting up all sorts of antics about her.

It took the old bear nearly half an hour to satisfy herself as to whether the *Panther* was a friend or foe; but, by-and-by she seemed to come to a conclusion, for she suddenly stopped short, threw up her head, gave a tremendous snort, and, wheeling around in a state of alarm, looked about as if for some means of escape. In a moment she took the back track. The alarm spread to the little ones, who commenced to run to the opposite side. At this moment the photographers came rushing up with their camera, and the family group was taken at a distance of about two hundred yards.

We were more fortunate than any previous Arctic voyagers in being able to get a photograph of polar bears in their native ice-fields. The bears now took to the water, with the intention of reaching the solid floe, but we anticipated them, and they wheeled about again to swim to the ice they had abandoned.

Putting the helm a-starboard, we now came directly in upon their wake, and when within thirty yards gave them a volley from our rifles, and one of the cubs lay lifeless upon the blood-stained water.

The others, by some mischance, escaped with only slight wounds, and made for the floe, diving and then paddling themselves along for some distance, about ten or twelve feet below the surface, where we could easily see them striking out for dear life.

The bow of the *Panther* was now run into the edge of the floe, and the captain and two others let themselves down upon it, by means of a rope, and ran across the ice to head them off and prevent them from making their way towards the land, for the bears had now regained the floe. Seeing the position of affairs, however, the bears turned about and again made for the water, when a shot from the captain's rifle brought down the cub. Notwithstanding her danger, the mother seemed unwilling to leave her dead cub, but remained beside it until the party were quite close to her, when a volley from them badly wounded her. Turning her head towards the hunters with a growl of defiance, she still refused to seek safety in flight; but at another discharge of the rifles she fell, mortally wounded, beside the dead body of her cub.

We now kept a sharp look-out for other game as we steamed along, and within thirty-six hours succeeded in killing three more of these noble animals. I may say that I so admired them in their struggle for life that, for my own part, I could not fire a shot at them.

We ran the *Panther* into the edge of the floe about a hundred yards, then let our six prizes down on the ice, and the crew, after a laborious effort, grouped them at a distance that the photographers might take both the vessel and the bears in one picture, our party gathering about the dead monsters.

Afterwards a nearer view was taken. As they lay there, one could not help recalling the fact that but a few short

hours before they had been roaming over their native ice-fields as seal hunters; and I may here remark that no man ever stalked a deer with more consummate skill than a bear does a seal. Ascending an iceberg, his telescopic sight enables him to see one at a distance of four or five miles. Then he cautiously advances, during the last eighth of a mile crawling on his belly, until he has reached within fifteen or twenty feet of his victim, when, with one supreme effort, he springs upon him and rips him open with a single stroke of his paw.

We had now passed well on our way into Melville Bay, but our situation there was indeed a hazardous one.

The ice was crowding about us all the time, driven by a three-knot current that whirled it round in the wildest manner, and it was not surprising that the captain decided this to be no proper place for the *Panther*, so we crawled out while the chance was good, and steamed northward once more into the pack. The weather was superb. For the most part the air was entirely calm, and in the perpetual sunshine our enjoyment was uninterrupted. Sometimes we were beset by ice-fields, and once or twice we were forced upon a berg while helpless among heavy floes. Once the *Panther* was pretty badly squeezed, and we had a lively exhibition of the power of the closing ice-field. Strong as our vessel was, we could readily see that she would be only as an egg-shell in the hand if caught where the ice was in rapid movement.

At length, after working about in various directions, we escaped from the heavy ice and passed into flat field-ice, miles in extent and about three feet thick. Here we were imprisoned for a short time. Then occurred one of those mysterious movements of the ice which take place when

most unlooked for. We had watched from the crow's nest for days for some slight change indicating a crack, when suddenly cracks appeared in every direction, and we were liberated at once and started northward.

When a whaler is nipped in the ice in this way and hopelessly wrecked, the crew build a shelter on the ice and then make their way over the fields to some Eskimo settlement or whaling vessel, if one happens to be in the neighborhood. Many of these vessels, while forcing their way through the ice, are crushed with scarcely any warning.

One, the *Alexander*, of Dundee, had passed almost clear out of the ice, with her bow actually in open water, when the ice closed and caught her just abreast of the mizzenmast, held her so about ten minutes, crushed in her sides, reached and broke off the mizzenmast. For about thirty minutes the ship was held in this position; then the ice separated, and the vessel sank out of sight. This leads to the mention of an interesting incident of Arctic navigation called by whalemen "docking" the ship, to prevent its being crushed. In working through the ice-fields early in the season the whalers generally keep to what is known as the "land ice," which is connected with the coast, and varies in width from a few hundred feet to perhaps one or two miles.

Between this land ice and the middle pack are open leads or lanes of water, and as the ships work through these leads the middle pack may lie off, say, two or three miles. From the crow's nest the body of ice is seen to be setting towards the land. Then it is that, to insure the safety of the vessel, the seamen dock her. This is done by sawing a channel in the land ice one or two hundred feet, and more if there is time, and hauling the vessel in

stern foremost. Here the ship lies waiting for the approach of the middle pack. When the two bodies come into collision the noise and tumult are awful, and the roarings and groanings of the great masses are to be heard for miles. At last it ceases, the crush and pressure of the advancing floe having been checked by the resistance of the land ice, but not until huge blocks from two to five feet thick have been hurled high into the air, layer after layer being thrown up until they have rafted into a confused pile fifteen or twenty feet in height. Through all the commotion the docked vessel lies in its resting-place out of reach and unharmed.

There is no phenomenon of Arctic navigation more sublime in its aspects than a storm spending its fury on the edge of the ice-pack. The water, breaking with terrific weight and power, wave after wave, is hurled against the pack, which it breaks, and tears, and rips up, throwing huge blocks upon the stubbornly resisting surface. It is a tremendous war of the elements, never to be forgotten.

Nothing can be more impressive and solemn than the contemplation of Nature among these Arctic ice-fields after one of the scenes I have described. Now all is calm, rest and repose. You feel that you can enjoy the silence of solitude as you never did before. You almost wish there was nothing to draw away the eye from gazing towards the far, unknown solitudes of the North; and you realize that though you were there alone, the Creator of all, the great God of Heaven, would accompany you to the confines of the pole and aid you in silently worshipping and adoring Him.

It is another sight we see in the mountains of Greenland, wild, rugged, and torn by deep ravines and gorges, their tops covered with flying storm-clouds which hide the sum-

mits from view. At their base a frail ship is sometimes seen, caught between the land ice and the middle pack of Melville Bay, forced high up on the grinding floes, and lying there as in an icy cradle. She is probably crushed, and the crew are making preparations to abandon her. They gather from the hold such stores and provisions as will be most needed, haul their boats out on the level ice to a place of safety, and are ready for their retreat should no friendly whaler rescue them.

It might be supposed that men, who had once endured the hardships and sufferings which beset the whalers, would be unwilling again to face them ; but it is not so. Those who have once entered these regions and seen this nature in all its wonderful manifestations of beauty and sublimity, seem to be drawn back again as with an irresistible fascination. It is to all who enter there the revelation of a new world, a new phase of life and nature, which is accompanied by the feeling of being in the presence of the Eternal God.

In our northward advance we passed about 125 miles into the Melville Bay pack, and nearly reached Cape York, the terminus of Melville Bay. This distance took us three weeks to accomplish, and cost us the consumption of 175 tons of coal. The season was a most unfavorable one. Not a single whaler succeeded in passing through into what is known as the north water, which extends about 25 miles, and through which we enter the ice of Smith's Sound, the point I had hoped to reach. Under favorable conditions, the distance it had taken me three weeks to make is passed in 36 hours. Dr. Kane and Dr. Hayes, in sailing vessels, had gone through in two days, and Sir George Nares, commander of the English Polar Expedition, and Capt. Hall, in the *Polaris*, had made the run in 36 hours.

We remained in our position amid the thick ice for several days, not unwillingly, so far as I was concerned, for I made some superb studies for paintings; but, before relinquishing my hope of a farther advance, I determined to make one more attempt if an opening occurred. The ship, I knew, was equal to any demand that could be made on wood and iron, and we tried once more to bore our way towards Cape York, only to encounter the heaviest ice we had yet seen. It might be called the palæocrystic ice, for it was fully as thick, varying, as it did, from fifty to a hundred feet.

This was our highest point reached, and we were all well satisfied that we had done our utmost. Circumstances were against us, and we decided to take advantage of the first favorable change to turn the bows of the *Panther* to the south and steam away from the midnight sun.

It is hardly necessary to say that we all became much attached to the staunch ship which had carried us so safely through many perils, and landed us, at last, once more, at our starting point, St. John's, Newfoundland.

THE BRITISH CAMPAIGN IN THE SOUDAN FOR THE RESCUE OF GORDON.

BY

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FORMERLY OF THE GENERAL STAFF OF THE EGYPTIAN ARMY.

I propose to present in this paper an outline narrative of the war in the Soudan for the rescue of "Chinese Gordon." The limits of such an article forbid more than a brief allusion to the events which led to this war, and which are still fresh in the public mind. They may be summarized as follows:

The brilliant and prodigal career of the ex-Khedive Ismaïl-Pasha ending in his financial ruin.

The installation of European commissioners of the public debt, followed by swarms of high-paid British officials taking entire control of Egyptian finances, revenues, railroads, and telegraphs.

The resistance of Ismaïl to their usurpation of his powers, and his compulsory abdication enforced by the British and French Consuls-General, June 26, 1879.

The merely nominal rule of his son Tewfik, and the sacrifice of every Egyptian interest to the payment of foreign bondholders; the dissatisfaction of the people, and the opposition of the Egyptian army to being made the chief victims of this policy, culminating in the military revolt of Arabi-Pasha; the bombardment of Alexandria,

the battle of Tel-el-Kebir, and the British occupation of Egypt in 1882.

These events made England the sole and absolute arbiter of Egypt's fate, for France had withdrawn from the "Dual Control" before the bombardment of Alexandria, rather than participate in that ruthless deed.

In October 1883, after one year of British domination, this was the situation of affairs:

The young Khedive was deprived of all real authority, British commissioners having more than ever before absolute control of the resources of the country and its entire administration.

The Egyptian regular army was entirely disbanded, except a few of Arabi's disaffected regiments, sent to the Soudan as a punishment for their rebellion.

A new native army composed of fresh levies, supposed by a convenient fiction to be the Khedive's army, but commanded by British officers, was created under Sir Evelyn Wood. A native constabulary force called *gendarmerie* (whose officers were chiefly Italian), raised to serve as police and not as soldiers, was organized under Valentine Baker-Pasha, the British ex-colonel of hussars.

The hitherto undisputed power of the Egyptian government, which had enabled it to enforce order and obedience upon the turbulent and barbarous populations of the Soudan, was fatally impaired, for the garrisons had already been reduced for reasons of economy, in order that the bondholders' coupons might be paid; and now a general impression that the Khedive had sold his country to Christians and foreigners began to prevail among the people, and to give double encouragement to the Mahdi's rebellion which had commenced two years before.

Having taken entire possession of the country, avowedly not as a conqueror but expressly as a friend and protector, solely to defend her ally the Khedive against his rebellious subjects, England became *in equity* Egypt's guardian, and as she had rendered her defenceless, she was bound by every consideration of justice to shield her from all harm.

How had she come to occupy such a position after her repeated declarations that the Suez Canal was the only British interest involved in Egypt, and that so long as it was safe, England would decline all interference in Egyptian affairs?

She had been driven step by step, almost unwittingly, to assume this rôle by the pressure of British bondholders numerous and powerful enough to control both Parliament and ministers. England's attitude at this time was tersely described by Hon. Henry Labouchere, the eminent M. P. and also editor of *Truth*, in these words: "Why are we in Egypt? THAT SHYLOCK MAY HAVE HIS POUND OF FLESH!"

Two courses were open to England.

One was to frankly assume a protectorate and to govern Egypt directly, either continuing the Khedive in his rôle of a mere figure-head or else removing and pensioning him off like an Indian Rajah.

The other was to limit the sphere of British action to securing the Khedive's power until he could re-organize his own army and consolidate his government. This object once attained, he should have been left free to govern Egypt in his own way, providing only for his compliance with the obligations he had contracted.

But just at this time commenced that astounding series

of vacillations, both political and military, that were destined to produce such disastrous results.

To proclaim a protectorate over Egypt was to falsify the declarations so often repeated to the world, and to incur the hostility of Turkey and France as well as the jealousy of other powers.

On the other hand, to withdraw her army from Egypt and leave the Khedive to govern independently, seemed to the British ministry a sacrifice of prestige and of the advantages apparently secured by the occupation.

In the words of a distinguished publicist*: "The ministry cherished the delusion that some middle course was open to them, by which, while retaining the advantages of a virtual protectorate, they could avoid the liabilities inseparable from its overt assumption. . . . We have deranged every thing and have established nothing in its place." While England held the Khedive in the most absolute tutelage, shorn of every power, she wished the world to believe that he enjoyed entire freedom of action and was alone responsible for the acts of his government. In pursuance of this policy of half measures, a partial evacuation was announced by Mr. Gladstone at the Guildhall banquet in London on the 9th of Nov., 1883, and this declaration was considered as the prelude to a complete withdrawal of the British army from Egypt. Consequently the reforms and innovations forced upon the Egyptian people in spite of their bitter antipathy were now regarded by them as temporary evils which would cease with the British occupation. To quote again from the same writer:

* Edward Dicey, Professor of Political Science and Economy at Oxford, in the *Nineteenth Century* for March, 1884.

"Egypt was given to understand that after having bombarded Alexandria, invaded the country, exiled Arabi, deprived the Khedive of his authority, disorganized the native administration, destroyed the mechanism by which hitherto order had been maintained after a fashion, and established in its stead a number of institutions on paper, which could be converted into realities only if ensured by a prolonged occupation, we were about to throw up the task we had undertaken and leave the country to its fate—*i. e.*, to a state of confusion closely bordering upon anarchy."

But this programme of evacuation was suddenly abandoned. Mr. Gladstone's Guildhall speech was made on the 9th of November, and on the 20th, news reached London of the entire annihilation in the Soudan of Hicks-Pasha's army of eleven thousand men, and of the defeat and death of Consul Moncrieff at Tokar. The orders already issued for the embarkation of one half of the British army and the withdrawal of the remainder from Cairo to Alexandria were countermanded, and the Soudan suddenly loomed up into formidable prominence, for while England had concentrated all her efforts to suppress Arabi's rebellion, another much more formidable had broken out in the distant regions of the Upper Nile. The easy triumph over the meek *fellaheen* in the holiday campaign of Tel-el-Kebir had been thought the end of the troubles, but now it seemed only the beginning thereof.

A description of the Soudan with its relation to Egypt proper is necessary to a complete understanding of what follows.

In the words of Herodotus, Egypt is the gift (or crea-

tion) of the Nile, for being a rainless country, she depends upon her *only river* for her very existence. The experience of fifty centuries has proved that Egypt can never be safe unless she controls the banks of the Nile at least as far south as Khartoum.

From the sea to the mouth of the Atbara above Berber, a distance of one thousand seven hundred miles, not a single affluent falls into the Nile, and the breadth of its valley above the Delta varies from a mere rocky cañon to a very rare maximum of three to four miles, the average being under two. Three million of people, being nearly one half of the population of Egypt and Nubia, are crowded into that narrow ribbon one thousand five hundred miles long by two in breadth, without any possible outlet, for all the vast spaces east and west (some eight hundred thousand square miles) are THE DESERT.

Vegetation stops just where the waters of the Nile cannot be lifted by irrigation, and the dividing line between that and the desert is as sharply marked as a gravel walk across a grass lawn. Between the Nile and the Red Sea is the *Arabian Desert*, and on the west, extending until it joins the Sahara, is the *Libyan Desert*.

Egypt *proper* extends only to the first cataract at Assouan, about seven hundred miles from the sea (lat. 24° 5′).

Between the first cataract at Assouan and the second cataract at Wady Halfa, the country is called Lower Nubia, and from Wady Halfa (lat. 22°) to New Dongola (lat. 18°) is Upper Nubia.

All the regions south of Dongola are embraced under the name of SOUDAN—an immense and indefinite region, stretching across the entire continent of Africa, on both sides of the equator, and subdivided by geographers into

Eastern, Central, and Western Soudan. The name is derived from the Arabic *aswad*, black, of which the plural is *suda;* so that *Beled-es-Soudan* means simply the country of the blacks, or, as we would call it, *Nigritia.*

The Egyptian Soudan comprises but a small portion of that immense territory. Its most important provinces are Dongola, Kordofan, Darfour, and Bahr-el-Ghazelle, west of the White Nile. Its eastern boundary is the Red Sea down to Massowah; thence the Abyssinian frontier, between which and the White Nile is the large and fertile province of Sennaar. When Gordon was Governor-General of the Soudan (1874–1879), a chain of Egyptian garrisons, of which Gondokoro was the principal, reached as far as the great lakes, all connected by telegraph with Cairo. This region, claimed by the Khedive as part of his dominions, was called the Equatorial Provinces; but in reality it is occupied by warlike negro tribes—Dinkas, Shillooks, Dowers, and others too numerous to mention, and generally participants in the slave-trade either as hunters or hunted; so that the Khedive's authority was limited to a small circle around each military post. Even in time of peace and under Ismaïl's and Gordon's strong government those tribes would frequently attack small Egyptian detachments, as when they massacred young Linant and his party in 1875. It flattered Ismaïl's pride to imagine that his empire extended to the lakes, but in fact, beyond Sennaar on the east, and Bahr-el-Ghazelle on the west, the Khedive's authority was purely nominal.

Mehemet-Ali, the great-grandfather of the present Khedive, was a man of eminent abilities, but merciless

and unscrupulous. He had no sooner consolidated his tenure of the vice-regal throne than he resolved to increase his territory. This was impossible within the narrow valley of the lower Nile; but above the arid deserts of Nubia are broad and fertile regions inside of the southern rain-belt, and well watered by the Atbara, the Sobat, and other affluents of the Nile. The so-called island of Meroë was formerly the centre of a civilization older than the Pharaohs. Standing upon the site of the ancient city, I counted no less than forty-two pyramids—smaller, it is true, than those of Gizeh, but of a size to be considered gigantic in any other land. Later still, Meroë was the seat of five populous Christian bishoprics.* Sennaar, lying between the White and the Blue Niles, possesses a soil of unrivalled fertility and produces wheat, corn, cotton, sugar, and gum in prodigious abundance, beside the *senna* to which it gives its name. Kordofan, on the west of the White Nile, is a sterile and almost waterless region, yet it yields vast quantities of ostrich feathers and the great bulk of the best gum-arabic of the world. But better still, the master of those provinces controls the rich trade of Central Africa—ebony, gold-dust, ivory, indigo, india-rubber, and above all, slaves. A pretext was easily found, and in 1822 Mehemet-Ali had achieved the conquest of Sennaar and Kordofan. Until that time the country had been ruled by numberless Sultans, as they called themselves, and its condition

* A fact mentioned by early historians and confirmed by the researches of Monsignor Daniele Comboni, Bishop of Nigritia, a most accomplished Arabic scholar and archeologist. He was a native of Verona, a man of splendid presence, genial nature, and the most liberal-minded priest I ever met. He accompanied me on my return journey from El Obeïd through Khartoum, Berber, and Suakim to Cairo, and he died in Kordofan in 1881, in the prime of middle life, a victim to the murderous climate.

from time immemorial had been one of continual rapine, anarchy, and savagery. Commerce could hardly be said to exist, for caravans had to pay heavy tributes to every robber chief, and even this did not always secure their lives and property from attacks by roving bands of Bedouins. Striking mementoes of that period of brigandage are the ruins of ancient castles seen on many basaltic islands rising one or two hundred feet above the river-bed. Some, like the feudal fortresses on the Rhine (which they so much resemble), were once the strongholds of bandit chiefs, whence they could spy out the approach of their prey; while others served as refuges in which the agricultural population stored their crops to save them from the raids of the desert nomads.

Mehemet-Ali's conquest was accompanied by fearful cruelties on both sides. I have stood at Shendy upon the very spot where Mehemet's son, Ismaïl, was roasted to death with all his chief officers and a portion of his troops. Ismaïl had made extortionate demands for gold, slaves, and forage upon the local Sultan, *el Nimr* (the Tiger), and had struck him across the face with his pipe-stem because the forage fell short. The crafty chief retired humbly from his presence, promising that an abundance would be supplied before morning. All the afternoon and evening immense quantities were piled all around the quarter of the town where Ismaïl and his troops were holding high revel. But an hour before daylight the stacks were simultaneously fired at every point, and the doomed Turco-Egyptians found themselves surrounded by a circle of flames from which none escaped, for el Nimr with his Nubians stood outside and shot down or speared every one who attempted

to break the fiery barrier. To avenge his son's death, Mehemet-Ali sent another army under his son-in-law—the famous *Defterdar* (so-called from his office of registrar or treasurer), whose name still lives in Egyptian traditions on account of his fiendish cruelties. This army of Asiatic Turks showed little mercy to African barbarians. More than 100,000 people were slaughtered between Abou Hamed and Khartoum, and a still larger number, chiefly boys and young women, were sent down as slaves to Lower Egypt. The bloody memories of the conquest were never forgotten, but so thorough had it been that sixty years elapsed without a general attempt at rebellion.

Even the worst evils are often followed by good results. By degrees, order, defective as it might be, arose from absolute chaos. Mehemet-Ali visited the Soudan and his military eye perceived at one glance the strategic importance of the point of land at the junction of the White and the Blue Niles. There he founded Khartoum (lat. 15° 30′) and made it the capital of the Soudan provinces, with a government palace, extensive barracks for troops, an arsenal, a ship-yard, and a growing population which, in 1876, had increased to more than 40,000. A despotic and often cruel government, establishing strong garrisons at important points, commanded peace and enforced obedience. Commerce, agriculture, and industry took the place of pillage and murder, and were efficiently protected though heavily taxed. Famines which were the frequent consequence of continual wars and rapine, disappeared after a government strong and regular, even if arbitrary and tyrannical, had given the husbandman an assurance of reaping the crop which he had planted.

Every thing in this world is relative. What would be an intolerable government for France or England may be very acceptable to a semi-civilized population, especially if it is better than any thing they have experienced before. I explored the greater part of the Soudan—the deserts between the Nile and the Red Sea from Kenneh to Suakim, as well as Kordofan on the west of the Nile. Altogether I spent two years travelling 6,000 miles on camel-back among the most numerous and powerful Bedouin tribes now in insurrection, and visiting all the principal cities—Berber, Dongola, Debbé, El Obeïd, Khartoum, Suakim, etc., etc. In all my explorations I had the best opportunities, and I made it a point to examine the condition of the country and the people. There were certainly no reasons to bias my judgment, and I give now the result of my experience and observations.

Everywhere I found the primary element of civilization and without which none can exist,—*submission to law.* It may be thought a crude aud defective law, but it possesses the advantage of the universal assent of the people, being based upon the Koran, which on the whole, is a humane and equitable code. Life and property were safer than in our own wild border lands. Of that ruffianism which makes a hero of a bandit like Jesse James and glorifies the monster who has killed a score of men in private brawls, there was not a trace. Murders were rare and generally punished with death. I remember seeing at El Obeïd the body of a murderer hanging from the gallows on the market-place. He had been convicted after a regular trial before the Cadi, but it was not until the case had been carefully revised by the

highest tribunal and the sentence approved by the Khedive himself that he was executed; for no provincial governor was authorized to carry out a capital sentence, except Gen. Gordon, upon whom the powers of life and death had been conferred by special firman for the purpose of suppressing the slave trade. Even the wild Bedouins, fierce nomads without fixed habitations, and yielding only a limited allegiance, had been compelled to abandon the plundering habits of their forefathers, and their sheikhs were held answerable with their heads for the safety of life, travel, and property throughout their deserts. In many thousand miles of travel among the now rebellious tribes, the Bishareens, Hassaneeyehs, Kababeesh, and others, I have met hundreds of caravans loaded, some with the most valuable products of Central Africa, others with European goods going to the interior. The commerce thus carried on by land, exclusive of the river trade, amounted to twenty-five or thirty millions of dollars a year. Yet no caravan, large or small, needed the protection of an armed escort, and all travelled in perfect safety under the charge of unarmed camel-drivers and the half-dozen merchants owning the goods. The certainty of swift and stern punishment by the Khedive's government, known to possess irresistible power to inflict it, was sufficient to guarantee security to all.

In Kordofan, one of the remote provinces, European as well as native merchants carried on an active trade by means of the electric telegraph, which reached to Darfour and the lakes, and they regulated their transactions by the daily quotations of ivory, gum and ostrich feathers at Cairo and Alexandria. This fact came under my personal observation at El Obeïd, as well as the following.

A branch of the great Austro-Italian Roman-Catholic mission at Khartoum was established at El Obeïd, consisting of twelve or fifteen priests and sisters. In that city of thirty thousand people, of whom two thirds were Mussulmans and the rest heathen negroes, priests and nuns in their distinctive costumes were daily seen plying their vocation absolutely unmolested in any way, though I cannot say that they made any converts, except the little boys and girls whom they purchased in infancy and taught in their school, and who continued good Christians so long as they were clothed and fed—and no longer. There were also some other branch missions far away from the protection of the garrison at El Obeïd, and they remained unmolested until the Mahdi captured that city, when twelve members were held for ransom and released upon payment of seventy thousand dollars by the Austrian consul at Khartoum. I can assert with truth that wherever an Egyptian garrison could enforce its authority, life and property were reasonably well protected, far better than could have been expected in such distant regions, and among a semi-barbarous people.

Yet I do not pretend to say that even under Ismaïl the Soudan was an Arcadia. By no means! For some years after the conquest, the military governors, all Turks, were cruel and rapacious, and confirmed the hatred for Turkish officials so deeply implanted in the Soudanese heart, and embracing all Egyptians whom they regard as Turks. But for the last thirty years, a milder *régime* had gradually prevailed. It cannot be denied, however, that the rapacity of the governors and their subordinates could never be entirely checked at such a distance from the seat of government at Cairo. The peasant or laborer

had to pay in extortions nearly as much again as the just amount of taxes which found its way to the government chest. But yet he had enough left to live easily in his frugal way, and was secure in the enjoyment of this surplus; whereas, before the conquest he never knew when war or the roving Bedouins would rob him of his sustenance and his life. No doubt there were numerous cases of wrong and oppression. Traders frequently had to pay heavy backsheesh to avoid worse extortion; but, after all, the government gave them the protection without which they could not have carried on their trade at all. Many poor wretches received the kourbash to force from them the payment of their taxes; but it was a point of honor with them, and they would have been branded as cowards by their fellows if they had paid up before taking as many strokes as they could bear. A civilized people is ruled by moral suasion, not, however, without severe penalties to enforce its laws; but barbarians cannot be controlled without a good deal of brute force. Full allowance being made for taxation and extortion, the population did not have to bear nearly so heavy a burden as that laid upon the Irish people in rents alone; nor had they to contend with evictions and starvation. The mildness of the climate making clothing and shelter almost a superfluity, the fertility of the cultivated land, and the increase of their flocks combine to procure to the Egyptian and Soudanese people a far easier life than falls to the lot of the peasantry of Ireland and all northern Europe. If law, order, and a regular government, even though defective, are preferable to anarchy, brigandage and incessant war, the Soudan was in vastly better condition under Ismaïl-Pasha than it had ever been before the

conquest. And be it remembered that the only alternative is between this imperfect but strong government, and a return to the former chaos and savagery; for the Soudanese, if left to themselves, must inevitably fall under the rule of numerous rival chiefs of slave-traders, of whom Abou-Saoud, Zobehr-Pasha, and Osman-Digma are representative types.

Such, then, was the condition of the Soudan under Gordon's administration before the deposition of Ismaïl; and it cannot be denied that that country enjoyed many benefits of an incipient civilization, destined to increase and develop if its government remained undisturbed.

But no government can be supported without taxation, and an ignorant people are unable to realize that the protection they receive is far more than an equivalent return for the taxes which they pay. It is not astonishing therefore that the Soudanese lost sight of the advantages they enjoyed in the security for life and industry, and considered all taxation as robbery. In the memory of their fathers, time had been when no governors and soldiers were sent to make them pay tribute to a Turkish viceroy at Cairo. The traditions of the cruel conquest with fire and sword sixty years before still lingered among the people, and it told them of the days when they were subject only to their own native sultans. With the natural tendency of a primitive people to extol "the good old times," they forgot that those petty despots were the absolute and unsparing masters of the lives and property of their subjects, and kept the country in a state of perpetual strife and devastation. These memories, kept alive by the extortions of some rapacious officials, nursed

the race-hatred of the Soudanese for the Egyptians, but with the great mass of the people it was a passive sentiment which would remain dormant unless aroused by exciting causes.

A much more active and dangerous element of discontent was found in the large and powerful class engaged in the slave-trade, that curse of Africa probably as old as the negro race with which it seems to be an innate instinct; for as Sir Samuel Baker remarks, the first impulse of a freed negro, as soon as he has a chance, is to acquire a slave of his own. That this trade existed in the days of the Pharaohs is placed beyond doubt by the images of chain-gangs of negro slaves carved upon their monuments.

The strength and magnitude of the slave-hunting and slave-trading organizations cannot be appreciated without a description of their system of operations.

An enterprising adventurer starts with a capital of £1,000 which, if he has it not, he can always borrow in Khartoum at 100 per cent. interest. He enlists 150 men from the thousands of slave-hunting soldiers and desperadoes who swarm in Khartoum and Dongola, eager for such employment. He supplies them with fire-arms and abundant ammunition; he buys a few hundred pounds of glass beads and a few hundred yards of coarse cotton fabrics for presents and barter. He charters six or eight Nile-boats and leaves Khartoum about the 1st of December. Sailing some five hundred miles or more up the White Nile, he lands at some eligible point and penetrates into the interior. First he begins to trade for elephants' tusks, but this is only a preliminary to more serious business. He invariably finds some negro chief at enmity with another and anxious to secure an ally so

well provided with fire-arms. A bargain is soon concluded, and they make a joint night-attack upon the enemy's villages, setting the straw huts on fire. All the warriors who resist are shot down with musketry as they rush out of their blazing homes. The rest, together with the women and children are captured, as well as the cattle still coralled in the zeribas.* The negro chief is delighted, for his enemy is "wiped out," and he himself is rewarded with fifty or one hundred cattle and three or four handsome slave girls. He and his people covet cattle above all things, and the trader has captured probably some two thousand head which he proceeds to barter for ivory—a cow for a tusk, which is all profit since the cows have cost him nothing. When no more ivory is to be had, the trader usually picks a quarrel with his late allies who in their turn are murdered or enslaved, their women, children, and the coveted cattle being added to the previously acquired booty.

In an average season, a party one hundred and fifty strong will secure ivory to the amount of £5,000. The men are paid their wages in cattle and slaves which have cost nothing, and receive in addition one third of the stolen cattle, leaving some four or five hundred slaves worth five or six pounds per head for the trader's own profit. These he crowds into his boats, guarded by a few of his men, while the rest establish zeribas from which they raid the country all around and procure more slaves for the time when their leader returns the next year with a larger force.

* This word, of frequent occurrence hereafter, is spelled variously—zaribah, zeriba, etc., in the attempt to represent its true sound, which is zah-reé-bah, with accent on middle syllable. It means an enclosure, generally of thorny brush-wood, or a stockade.

Meanwhile the slaver sails back down the Nile and is met at safe points by the regular slave-merchants called *jellabs*, mostly Arabs, waiting to purchase the slaves for ready cash. These unfortunates are now marched off by various routes, avoiding the Egyptian garrisons, some down the Nile, others across the deserts to the Red Sea, multitudes perishing by the way. The survivors find a ready market in Egypt, Arabia, Turkey, Persia, and all the Mussulman provinces of Asia, while the successful adventurer returns with his ivory and gold to Khartoum, already a rich man. There he repays his loan with interest, purchases fresh supplies for the men he left behind, enlists more followers, and starts back the following December to operate year after year upon an ever-increasing scale.

The practical working of this system is fully illustrated by the career of the notorious Zobehr-Pasha who rose from a common slave-hunting hireling to a conqueror, and narrowly missed becoming a king.

He was of that turbulent Dongola race who take to slave-hunting as naturally as a duck to water, and he began his career as a mere enlisted mercenary; but before long he started on his own account, and possessing a natural aptitude for organizing and commanding men, his zeribas were soon numbered by scores, forming a chain of fortified posts extending more than a thousand miles beyond Khartoum. Around his head-quarters at Shaka a town grew up as large as El Obeïd, and there he kept up a royal state, with a body-guard, and chained live lions in his audience-hall. Dr. Schweinfurth states that in 1871 no less than 2,700 jellabs visited that place to buy the numerous slaves Zobehr had captured and

collected there. Having devastated all the surrounding regions, his base of supplies was then the powerful kingdom of Darfour; but Zobehr having incurred the enmity of its monarch, the latter forbade the exportation of the grain without which the slavers could not subsist. From his numerous zeribas Zobehr assembled an army of twelve or fifteen thousand men, and in a great battle at Menowatshee, in 1874, he defeated and killed Sultan Ibrahim and his two sons, thus extinguishing a dynasty which had ruled over Darfour for four hundred years. If let alone, he would have seized the vacant throne, but the Khedive Ismaïl was too far-sighted to permit a chief who once before had defied his power and attacked his troops, to become an independent king. So he sent a regular army, too strong to be resisted, to complete the subjugation of Darfour so nearly accomplished by Zobehr. The latter, making a virtue of necessity, turned over his conquest to the Khedive, expecting in return to be made Governor-General of Western Soudan. His hopes were encouraged, and he was invited to Cairo. But before going there he assembled his lieutenants at Shaka, and made them take a solemn oath upon the Koran to obey whatever orders he might send them from Cairo. Arrived there, he was made a pasha and assigned a pension of £100 a month. He had brought with him £100,000 in gold, which he vainly expended in urging his claims. He was treated with great honor, but kept in a sort of gilded captivity. Disappointed and irritated, he sent secret orders to his son Suleiman to summon all his followers to rebel against Gordon, and in a short time Suleiman raised ten or twelve thousand men, far better fighters than Gordon's troops, and secretly supplied by

Zobehr with money, arms, and ammunition. This rebellion was not suppressed until twelve battles had been fought by Romulo Gessi, Gordon's valiant lieutenant,—killed some years later fighting another rebellion of slave-hunters. Suleiman himself was captured and Gessi had him tried and shot for treason, with Gordon's approval, and among his papers were found Zobehr's letters inciting the rebellion. The latter was imprisoned for some months, then released, though still forbidden to leave Cairo, but not deprived of his honors and pension. When Gordon, in 1884, found his position at Khartoum untenable, he urged the British authorities to send Zobehr to succeed him, as being the only man able to organize a government and prevent utter anarchy, but his record was too black, and the authorities wisely refused to trust him.

Zobehr was only one of many powerful slave-hunting warrior-chiefs. Another was Abou-Saoud who also raised a rebellion, and after causing much trouble, made terms and was received back into favor. Yusuf who did the same, was made a pasha and was exterminated with six thousand men by the Mahdi, in Sennaar. Another was Osman-Digma who has done such splendid fighting near the Red Sea, and is still continuing the war against the British. In fact, slave-hunting is war on a barbarous and often extensive scale, and its leaders have to possess no inconsiderable military capacity.

The slave-trade was the only one that flourished before Mehemet-Ali's conquest, and it continued to flourish unhindered until General Gordon's appointment as Governor-General of the Soudan (1874–1879). From the de-

scription given above of the *modus operandi* of the slave-hunters, it is evident that the number slain in the raids or left to starve after the destruction of all their subsistence must nearly equal those reduced to slavery; and of the latter, at least one third perished by the way, although none but the young and able-bodied were considered worth carrying away. In spite of this frightful mortality, not less than three hundred thousand slaves were annually brought down the Nile and across the deserts from Central Africa. Baker, Schweinfurth, and other African explorers bear witness to the devastation produced by this hellish brigandage which reduced to absolute deserts provinces as large as France and Germany, and that had formerly supported a numerous population. One of Ismaïl-Pasha's strongest claims to the sympathy of the civilized world is the vigorous and earnest attempt he made to suppress this atrocious crime. He gave Gordon orders to annihilate it by the sternest exercise of military force, and invested him with unlimited powers for that purpose. The effort was only partly successful, for it is impossible to change in a few years the customs and traditions of centuries, although Gordon's sub-governors were afraid to disregard his instructions, and many slave caravans were intercepted and confiscated for having ventured too near the Egyptian garrisons. This fact came to my personal knowledge at El Obeïd, where I was detained several months by the effects of the deadly climate which shattered my health for ever and killed a number of my comrades and escort. That city was the residence of the governor of the province of Kordofan, and in peace times was garrisoned by some three thousand Soudanese troops. More

than once I saw gangs of slaves just released from the traders, being marched down to the barracks by an Egyptian sergeant to be enrolled as recruits. They were great, tall fellows, emaciated by fatigue and starvation, and all just as perfectly naked as they were born. They walked in single file, each one fastened to the next by a piece of wood about five feet long, reaching from the back of the neck of the first man to the throat of the next behind him. Thus they had marched hundreds of miles, never released for an instant except when one would drop dead and be left for the vultures and hyenas. Perhaps half of them had perished by the way, and it was impossible to send back the rest to their country. So the government made soldiers of them and gave them the women slaves for wives. This had at least the effect of discouraging the slave-trade by the confiscation of the merchandise. These fellows as soon as enrolled were clothed in a good white cotton uniform, fed on fair rations of bread and meat, better than they ever had before in their lives. They were taught Arabic and the Mohammedan religion of which they soon became zealous proselytes. They learned military drill and discipline very promptly and perfectly. These Soudanese regiments formed of men who had been warriors in their own country, not only looked very soldier-like, but they were greatly superior as fighters to the troops recruited from the meek and peace-loving fellaheen of Lower Egypt.

But the current was too strong to be entirely stopped, and it sought secret channels out of reach of governors and garrisons. I was at Khartoum in 1876, during Gordon's governorship—but at that particular time he

was on a tour of inspection to Gondokoro and the lakes. I made many inquiries and obtained much information from the Austrian Consul, who was in full sympathy with Gordon, and he told me that it was true that slave caravans were no longer brought to Khartoum, and that the traders had to seek concealment. "But," added he—"if you wanted to purchase a hundred boys or a hundred girls, they can be procured and delivered to you at a safe place in twenty-four hours for $35 to $50 per head." Nevertheless, it is believed that under Gordon's rule the annual importation from Central Africa was reduced from three hundred thousand to less than one hundred thousand, and in the attainment of this result, great numbers of the traders were financially ruined, and hundreds of the slave-hunting soldiers caught red-handed were shot—"*pour encourager les autres.*" It must be kept in mind, however, that this warfare was carried on against slave-hunting only. In the nature of things no interference could be attempted or was desired with regard to domestic slavery as it existed in Egypt and the Soudan.

As a natural and inevitable consequence, all the powerful class of slave-hunters, together with all those who derived profit from the slave-trade, such as jellabs, usurers, furnishers of supplies, bandits and adventurers, were driven to desperation by restraints which meant ruin to them, and they were ready for revolution.

But far more formidable than all the rest, if once aroused into hostility, were the half million of Bedouins roaming the deserts east and west of the Nile, of whom every male above fifteen is a warrior. They are of different blood from the people of Egypt and the Soudan,

their ancestors having crossed over the Red Sea from Arabia long before the Christian era, and they have mingled but little with other races. They are true Ishmaelites, and exhibit the characteristics of the Arab race, being slender, of medium size, well formed, with small hands and feet and arched instep, varying in color from olive to dark bronze, and with straight aquiline features. They are proud, indomitable, and prefer independence to life itself. Having but few wants, their deserts supply them with nearly all that they need. They are nomads whose wealth consists of flocks and camels, living where agriculture is impossible, and scorning the inhabitants of towns as "dwellers among bricks." Even Mehemet-Ali's iron hand could extort from them only the most limited allegiance. Though born-warriors, they never submitted to conscription, and they paid tribute to the Khedive because they found it to their interest to do so, being granted in return the monopoly of the carrying trade across their country, and allowed to retain their patriarchal form of government under their great sheikhs, who can trace their origin even beyond the days of the Prophet.* On these the Khedive bestowed high rank, privileges, and revenues on the condition of their insuring the peace and safety of trade and travel through their territories, and this they did so effectually that, as I stated before, no caravan needed an armed escort. The principal Bedouin tribes are the Ababdehs, Bishareens, and Hadendowas, on the east of the Nile; the Has-

* In my first lecture, published by the American Geographical Society in 1880, "Life in the Egyptian Deserts," I gave a very complete description of the manner and customs of the Bedouin tribes. We are compelled to write Arab names as they sound, hence the diversity in spelling them by English, French, Italian and German writers.

saneeyehs, Kababeesh, and Baggáras, on the west. All the tribes wear the same costume, which for the common people consists of a few yards of coarse white cotton cloth wound around the waist and legs to the knees, with sandals for their feet. The upper part of the body is exposed to the burning rays of the sun, mitigated only by the abundant grease with which they plaster their hair, and which melts and flows upon their breasts and shoulders. They all go bare-headed at all times, even when on the march the thermometer registers 150° or 160°, with the fierce African sun vertical over their heads and the burning sand under their feet. Stranger than all, while some of the tribes arrange their hair in thick cushions, six or eight inches high, others shave their heads and seem to suffer no inconvenience from an exposure which would kill a European, or even an Egyptian in fifteen minutes. All the Bedouins go armed at all times, their equipment consisting of shields of hippopotamus or giraffe hide, lances, and the broad, straight, double-edged, two-handed swords with which they make their headlong charges. Feuds are frequent among the sub-tribes, and their internal quarrels, of which the Egyptian government took no notice, always kept alive their warlike spirit. It is from these tribes that the Madhi and Osman Digma obtained the great mass of their best and bravest soldiers.

With such elements it is evident that the Soudan was like a train of powder which a single spark might fire at any moment. Yet no general rebellion would have been attempted so long as the Khedive's government retained its power and prestige. But just at that time occurred a remarkable combination of circumstances.

1st. Ismaïl-Pasha's strong personality was eliminated by his forced abdication.

2d. Gordon deprived of Ismaïl's unlimited support, and disgusted at the complaints of the British commissioners at Cairo, because, under his upright administration, the Soudan no longer yielded a surplus, resigned his office and his successor, Raouf-Pasha, reëstablished the old abuses.

3d. The Egyptian government was disorganized and its army destroyed by foreign interference and by Arabi's rebellion.

4th. The iniquitous bombardment of Alexandria aroused the dormant Mussulman fanaticism, and the British occupation of Lower Egypt impressed the Soudanese with the idea that the Khedive had sold his country to Christian foreigners.

The natural consequence was that all the bonds which had kept the Soudan in subjection were loosened at once. Gordon himself had warned Ismaïl, when invested by him with unlimited powers, that when he left, it would never again be possible to return to the old *régime*, and this explains the expression he used later: "I laid the egg which hatched the Mahdi."

It is worthy of notice that no rebellion could have succeeded which did not appeal to the passions or interests of *all* classes. The slavers' grievances had awakened no interest in the Bedouins of the desert or the tillers of the soil. Therefore Zobehr, Abou-Saoud, and Yusuf had been defeated. Other Mahdis had appeared from time to time, but appealing only to religious fanaticism, they had been easily crushed. But now only a leader was wanted who could unite *all* the elements of discon-

tent under a common standard, and at the most critical and opportune moment the leader arose.

In the town of New-Dongola, on the west bank of the Nile, some forty-four years ago, was born a Nubian boy with all the characteristics of his race; a tall, well-proportioned form, dark-brown complexion, straight features, long and crisp, but not woolly hair. His name was Mohammed-Achmet, and his occupation in youth that of a carpenter and boat-builder. Before reaching manhood he resolved to become a *fakir*, and for this purpose he learned to read and write. The fakirs (Arab plural, *fokarah*) are a class who may be considered as half priests, half laymen. They are the school-teachers of Mussulman countries, and the instruction they impart is limited to reading and writing Arabic and learning by heart as much of the Koran as possible. They are also the expounders of the Koran which is not only the religious but also the civil and political law of Islam, so that they are to some extent the lawyers of the country; nor are they without medical pretensions, though their practice consists mainly in charms and the use of written texts of the Koran applied to the person of the patient or taken internally. A great portion of their income is derived from the sale of amulets supposed to protect the wearer against bullets and wild beasts, and the crops and flocks from the evil-eye.* Their influence over the superstitious masses is immense. They are always called

* One of the Egyptian staff-lieutenants attached to my expedition, a graduate of the Cairo Military School, quite intelligent, a fair mathematician and surveyor, reading and speaking French fluently, but a devout Mussulman, wore an amulet composed of leaves of desert plants, the hair of a hyena, a piece of serpent-skin, the whole wrapped in a piece of parchment on which was a text of the Koran written by a fakir. This talisman, he assured me in all seriousness, rendered him invulnerable to all attacks of wild beasts as well as to the influence of the "evil-eye."

sheikhs (elders), and are treated with great reverence, which is still increased by their affectation of superior sanctity.

It was not long before Sheikh Achmet, by his display of extraordinary piety, acquired the reputation of a holy dervish, a grade above that of fakir, and corresponding somewhat to the mendicant friars of Catholic countries. There was an ancient tradition among Mussulmans, that about the end of the thirteenth century of the Hegira (1882–3) a prophet would arise who would restore the glories of Islam and conquer the whole world. It was prophesied that this *Mahdi* (derived from *hada*, to lead—*Mahdi*, led by God) would be named Mohammed, would be a carpenter by trade, would have only four fingers on his left hand, and certain moles or marks upon his face. By accident or design, Mohammed-Achmet while working at his trade had chopped off a finger of his left hand, and he claimed that his face bore the signs indicated by the prophecy. To increase his reputation for holiness, he retired to a cave in the island of Aba above Khartoum and became a hermit, pretending in the approved style of prophets to have visions and revelations from God. He was living there in comparative obscurity, evolving himself into a Mahdi when I passed not far from his retreat in 1876.

There can be no doubt that he was a man of uncommon shrewdness and ambition, and that he kept himself fully informed of all the events occurring in Lower Egypt. The wonderful rapidity with which news travels through mysterious channels in Mussulman countries is a well-established fact. In this way the disaffection of the army and people, the forced abdication of Ismaïl-

Pasha, the dictatorship of England and France, and the *pronunciamiento* of Arabi-Pasha were known in the Soudan two weeks after they occurred, in spite of the official suppression of all adverse intelligence by telegraph. It is a significant fact that the first military rising that brought Arabi to the front took place in February, 1881, and that as early as July of the same year, Mohammed-Achmet proclaimed his mission. Raouf-Pasha, then governor of the Soudan, received at Khartoum, early in August, a message from him to this effect:

"*Bismillah, er rachman, er raheem!*—In the name of God, the gracious, the merciful! Blessings be on the Lord Mohammed and his race! . . . This is sent by the servant of the Lord, Mohammed-Achmet, the son of Abd-Allah. . . . God has said in His only book [the Koran]: 'Oh ye that believe, I will show you a way by which you may be saved from great troubles; only believe in God and in His messenger, and fight the Lord's battles with your goods and your bodies. And know this and hold it fast: that God has called me to be a Caliph, and that the Prophet (whom God bless!) has proclaimed that I am the expected Mahdi, and has placed me upon his throne above princes and nobles. And God has strengthened me by His angels and prophets, and by the elect and believers among the Djinns [the genii or demons, some of whom the Mussulmans believe to have been converted to Islam]. And He has also said, God has given thee signs of thy mission, namely the moles on thy left cheek. And another sign He has given me, that out of the fire appears a standard which will be with me in the hour of battle, carried by the angel Azraël, whom God bless! And He has also told me that whoever does

not believe in me does not believe in Him or His prophets. Whoever fights against me will be destroyed in this world and the next, and his goods and his children will be a prey to the believers!"

After this preamble, he summoned all governors and peoples to submit to his authority and join his standard for the destruction of all Christians, foreigners, and Turks, and the conquest of the entire country. He further proclaimed the abolition of all debts and taxes, and promised that all who fell in battle in his cause would enter at once upon the enjoyment of the delights of the Mussulman paradise.

At first, Raouf-Pasha tried persuasion and sent the ex-rebel Abou-Saoud to the island of Aba. The Mahdi, as he was now called, received him surrounded by several hundred men in coats of mail and drawn swords. When Abou-Saoud represented to him the madness of rising against the government which possessed soldiers, breech-loaders, cannon and steamers, the Mahdi replied: "If the soldiers shoot at me and my people, their bullets will do us no harm; and if they attack us with steamers, both steamers and cannon will sink together."

Negotiations failing to produce submission, Raouf reluctantly had recourse to force, but he made the mistake of underestimating the importance of the incipient rebellion. On the tenth of August, 1881, he sent three hundred regulars and one cannon on two steamers under Abou-Saoud. This force would have been more than sufficient if the soldiers had not been inclined to believe in the Mahdi's divine mission. When they landed and met the Mahdi, they refused to fire at the "holy man"; —nevertheless the holy man and his people killed one

hundred and thirty of the soldiers, and the rest fled in terror to their steamers. The gunner was ordered to fire the cannon at the Mahdi, who was sitting on horseback a short distance from the shore, but in his excitement and terror he fired wide of the mark, and the Mahdi coolly turning his horse rode quietly away, while the discomfited expedition returned in dismay to Khartoum. This first success over the government troops gained for the Mahdi much prestige and a large increase of followers.

In December following, the governor of Fashoda, a Kurd named Rashid-Bey, advanced against the Mahdi with four hundred regulars and two thousand Shillooks. A short and fierce battle was fought at Jebel Gedir, in which the governor and all his troops and nearly all the Shillooks with their king were slaughtered by the Baggáras. All the Remington rifles and ammunition of the regulars and a large quantity of supplies fell into the hands of the Mahdi, who captured Fashoda, an important military post on the White Nile. This second victory was followed by the accession of several considerable tribes. To the powerful and fierce Baggáras, who had already joined the Mahdi's standard, were now added the Kababeesh and Hassaneeyehs in Kordofan and the Abou-Rof in Sennaar, while the Ababdehs and Bishareens, between the Nile and the Red Sea, were ready to rise at the approach of the Mahdi who sent emissaries everywhere with the ominous message: "Be ready, I am coming!"

In the meantime Raouf-Pasha was superseded, and Giegler-Pasha, a talented Bavarian engineer, with whom I had become well acquainted in Kordofan, was left in

temporary command until the arrival of Abd-el-Kader, the new governor-general. The situation was very critical, for nearly the entire Soudan was rising; but Giegler who had been vice-governor since Gordon's time displayed great energy. He enlisted and organized a considerable force from the Chiaggias, Dongolawees, and other tribes which still remained loyal to the government. To these were joined about fifteen hundred regulars. This army, well armed and equipped by Giegler's care, and numbering nearly six thousand men, started up the Nile about the middle of March, 1882, for Jebel Gedir. Their commander was Yusuf, formerly a great slave-hunting chief, who had killed Munza, the king of Monbuttu.* Later he had rebelled against the Egyptian government, by whom he was pardoned and received back into favor. He had commanded Egyptians under Gessi in the rebellion of Zobehr's son Suleiman, and had contributed to Gessi's victories, for which service he had been made a pasha. In June news reached Khartoum that Yusuf-Pasha with his entire force had been annihilated by the Mahdi into whose hands fell all their arms, ammunition, and a vast amount of supplies. As usual in those desert battles, only a mere handful of the vanquished escaped to tell the story of the disaster. The consternation of the European and Egyptian population of Khartoum and Berber was extreme, and with good reason, for before mid-summer Darfour was entirely lost, while Kordofan and Sennaar were in great danger, although Egyptian garrisons still held Bara and El Obeïd, the capital of Kordofan, and the city of Sennaar, the capital of the province of that name.

* See Schweinfurth's "Heart of Africa" for an account of King Munza.

It was at this juncture that the new governor-general, Abd-el-Kader-Pasha, arrived at Khartoum. He was an accomplished officer who had received several years' training in the Imperial Military School of Vienna. He was a Turk by birth and a man of splendid, soldier-like presence. He had held a high command of Egyptian troops during the Turco-Russian war in 1877–'78, and on several occasions had given proof of military skill and much personal bravery. One of his first measures was to abolish the government monopoly on all articles of trade except ivory, and to endeavor to allay dissatisfaction and revive trade by lowering tariffs and promising a regular steamer service on both Niles. But these reforms came too late, for nearly the entire Soudan was already in arms.

Abd-el-Kader lost no time in organizing means of defence. No troops could be drawn from Lower Egypt where Arabi's rebellion was at its height. Abd-el-Kader had but a few companies of Soudanese regulars. He enlisted several thousand Chiaggias and Dongolawees and formed them into regiments fairly armed and equipped. He strengthened his position at Khartoum by erecting a substantial line of earthworks defended by artillery. His force was also augmented by many irregulars drawn from the Bedouin tribes still faithful to the Khedive.

If any illusions had existed as to the formidable character of the Mahdi's rebellion, they should have been dispelled by the events now taking place. It had been generally believed up to this time that the Mahdi's victories were due to accidental causes, and that if he should meet with a serious disaster, his followers would forsake him

and his power would suddenly collapse. But this expectation was totally disappointed. The Mahdi's forces were repeatedly defeated, but he seemed to gather new strength after each repulse. On the 24th of June he attacked Bara, near El Obeïd, and was driven off with great slaughter. On the 28th of August his relative and lieutenant, Amr-el-Makashef, attacked Duem on the Nile above Khartoum, with fourteen thousand men. The town was well fortified and garrisoned by five hundred Egyptians. The attack lasted four hours, until three thousand rebels had fallen under the withering fire of the Remington breech-loaders. The remnant of this force retreated to Sennaar and was again defeated by Salah-Aga, and Amr-el-Makashef was killed; but the main body succeeded in crossing the White Nile and joining the Mahdi who had invaded Kordofan after the destruction of Yussuf-Pasha's army.

On the 8th of September, 1882, the Mahdi re-inforced by the accession of the Hassaneeyeh and Kababeesh tribes, appeared at the head of sixty thousand warriors before El Obeïd which had been well fortified and was defended by a garrison of six thousand regulars, and twelve pieces of artillery. A furious attack was made at daybreak of the 9th. The rebels' charge upon the outer works was so desperate that the soldiers gave way and retreated upon the inner line. The enemy rushed after them in hand-to-hand fight and would have entered the place pell-mell with them; but Iskander-Bey, the Egyptian commander, exhibited rare coolness and decision. He concentrated a heavy fire of rifles and artillery upon the struggling mass of the enemy and of his own soldiers, killing three hundred of the lat-

ter, but saving the town. On the 11th and the 14th the Mahdi's troops again stormed the works with desperate valor, opposing only swords and spears to the terrible fire of breech-loaders and artillery, until fifteen thousand men (one fourth of his army) lay dead or dying before the walls of El Obeïd. After this enormous loss, the Mahdi sullenly retired to re-organize his shattered forces. It is a noteworthy coincidence that at the very same time (September 12, 1882) Arabi-Pasha was defeated with very feeble resistance at Tel-el-Kebir.

The terrible reverse at El Obeïd would probably have ended the career of a leader of ordinary capacity. Not so with the Mahdi; it only proved his formidable power and tenacity of purpose. Allowing his followers only time enough to go home and secure their crop of dourah, he returned in December with one hundred thousand men, captured Bara, and then laid siege to El Obeïd, which surrendered on the 17th of January, 1883, after an heroic resistance. Every article of food had been consumed, including even dogs. The soldiers had eaten their leather-straps, and the starving population rose in desperation to demand submission to the Mahdi. All the inhabitants, not excepting the Christian Syrian and Greek merchants, acknowledged him as a prophet, and the garrison with the gallant Iskander-Bey joined his ranks, professing conversion to full belief in his divine mission as proved by his astonishing success. The greatest wonder is that they should have resisted so long a prophet who appealed so strongly to their religious traditions and sympathies. Among the captives were the members of the Catholic mission. The Mahdi treated them well in spite of the failure of his arguments to convert them, and

finally liberated them upon the payment of a ransom by the Austrian Consul at Khartoum.

This signal victory produced an immense effect throughout the Soudan. The Mahdi was now in possession of the capital of Kordofan, the largest city west of the Nile. Darfour and Kordofan were completely in his power, Sennaar nearly so, and the tribes which had wavered in their allegiance now recognized in him the true Madhi sent of God to break the yoke of Turks and infidels. The material results of his success were the accession of the conquered garrison (some five or six thousand brave and trained soldiers), the capture of a large number of breech-loaders, twelve pieces of artillery, and a large supply of ammunition. El Obeïd became his capital and his base of operations until Khartoum fell into his hands. Already the latter city was threatened by Bedouin raids, and numerous secret emissaries were inciting the people to rebellion.

Such was the condition of affairs in the Soudan at the beginning of 1883. The attention of the Khedive and his government had been so concentrated upon the suppression of Arabi's rebellion that they had overlooked the Mahdi's. It was only after the capture of El-Obeïd that they realized the extreme gravity of the situation. But they were now entirely helpless. The Khedive naturally applied for aid to his self-appointed guardians and protectors, but he was answered that British interests being in no way involved in the Soudan, England would give him no assistance. Yet, at that moment, a little help would probably have checked the rebellion before it became too strong. With the British army of occupation were several Anglo-Indian regiments accustomed to

a hot climate; the Suakim-Berber route was open, for the Bedouins of that desert were still loyal and the season was favorable. An expedition sent at this juncture would at least have saved Khartoum and the Eastern Soudan, as well as the lives and the millions wasted later in disastrous failure.

Not only was England's aid refused to the ally whose army she had destroyed and whose government she had disorganized under the guise of friendship, but the Khedive was forbidden to use his own still considerable resources. He realized that unless he sent an army to suppress the Mahdi's rebellion, the vast empire of the Soudan would be lost to Egypt. He directed Genl. Charles P. Stone (formerly U. S. A.), Chief-of-Staff of what had been the Egyptian army, to prepare plans and estimates for a campaign. Although this skilful and experienced officer had never in person visited Upper Egypt or the Soudan, he had studied the reports of the expeditions which he had sent under American officers to explore those regions, as well as those of Sir Samuel Baker and General Gordon. He knew the geography and topography of that country, and understood the peculiar difficulties of warfare in the deserts. He was an excellent organizer and a judicious officer, by no means given to prodigality in public expenditures. After mature consideration, he estimated that a force of twenty-seven thousand regular Egyptian soldiers was necessary to reconquer Kordofan, suppress the rebellion, and reinforce the garrisons so as to insure future tranquillity. When it is remembered that Wolseley took over ten thousand British troops south of the 2d Cataract merely for the purpose of relieving Gordon and returning, without any

intention of suppressing the Mahdi, Genl. Stone's estimate appears very moderate, especially considering the very different value of British compared to Egyptian soldiers.

There were sufficient funds in the Egyptian treasury to fit out the expedition, and the required number of trained soldiers could have been very promptly raised by recalling the lately disbanded regiments to their colors. But just at that time the coupons were due to the foreign bondholders, and moreover, Egypt was to defray the cost of the British army of occupation and to pay $25,000,000 for the destruction of her own city of Alexandria by the British fleet. It mattered not that the Egyptian debt had been declared by British financiers in an official report to Parliament to be more than double what was justly due. The bondholders' coupons must be paid though all Egypt perish. "Shylock must have his pound of flesh!" Therefore, when the Khedive asked of his British masters permission to send an expedition and submitted Genl. Stone's estimates, he was answered that Egypt could not be permitted to increase her financial burdens, and that the funds in the treasury could not be applied to the recovery of the Soudan.

This opportunity being thrown away, nothing remained but to notify Abd-el-Kader to make the most of the means at his command. We have already seen with what energy he set about fortifying Khartoum and organizing a force from the yet loyal tribes and the Dongolawee and other slave-hunting soldiers now out of employment. The only reinforcements given him were three or four of Arabi's disaffected regiments, sent to the Soudan in December as a punishment for their rebellion, but too late to save El Obeïd. With this accession, he had

in hand an available force of about eight thousand men for active operations. During the spring and summer of 1883 he defeated the Mahdi's forces in four severe conflicts. But his success excited jealousy and intrigues at Cairo. Sir Evelyn Baring, who from a Major of Artillery had become the virtual autocrat of Egypt as Minister Resident, was unfriendly to him as he was afterwards to Gordon. Abd-el-Kader was recalled. His successor as governor-general was Allah-ed-Deen, while his little army was put under the command of an ex-major of he Bombay army, until then unknown to fame, who was made a general under the title of Hicks-Pasha. He must have been a man of ability, for in spite of his ignorance of the people, the country, and even the language of the heterogeneous force he commanded, he inflicted three serious defeats upon the Mahdi's lieutenants on the east bank of the Nile, so that Sennaar was almost clear of rebels. The Khedive's ministers now urged the recapture of El Obeïd as necessary to the safety of Khartoum and the eastern Soudan. The British commissioners being consulted, *advised* against it, but they did not *forbid* it, as they had the power to do. Says Prof. Dicey: "There is no doubt that England could if she had chosen have hindered the campaign of Hicks-Pasha. By the fact of her not exercising her right of veto, she became in reality responsible for it." And Sir Samuel Baker wrote at the same time: "Everybody knew that England was the *only* power in Egypt, and that the Khedive could not move his little finger without her special permission; and that as she had completely fettered the Egyptian authorities, she alone was responsible for the situation."

But this was only another instance of the policy of half measures. The intention of the British authorities at Cairo was, if the expedition was successful, to claim credit for having permitted it; if otherwise, for having advised against it; and in any case to shut the mouth of those who pretended that the Khedive did not possess absolute freedom of action. Yet while permitting it, every thing was refused that might insure success. "We absolutely refused," adds Prof. Dicey, "to allow either English or Indian troops to be sent. We also insisted that the native Egyptian army which had been organized under British officers, should not be sent to the Soudan, because as these officers still retained their rank in the British army, their participation in a Soudan campaign might be deemed inconsistent with the theory that our intervention in Egypt was only of a temporary and provisional character. Though we enforced, both by precept and example, the necessity of placing their troops under British officers, we allowed them to enter upon a momentous campaign while refusing the Egyptian government a permission to enlist the services for the Soudan of any officer either on active duty or on half pay." Sir Samuel Baker's arraignment of this shuffling policy is still more severe (see his letter to "The Times," dated Cairo, April 5, 1884).

Hicks-Pasha organized an army of eleven thousand men. On his staff were eleven Englishmen who like himself had severed all connection with the British service, as well as some officers of other European nationalities. Although he had six thousand camels, mules, and horses, so many were needed for supplies, baggage, and ammunition, that he was unable to carry more than

one day's water. From the moment he left the Nile, none was to be found in the deserts of Kordofan, except in the rare and scanty wells of very great depth (from one hundred to two hundred and fifty feet by my own measurement), and therefore very easy to destroy. Major von Seckendorff, an Austrian on Hicks-Pasha's staff, sent the last intelligence ever received from his army in a letter dated Sept. 25th, from Duem, describing the fatiguing twelve days' march along the Nile from Khartoum to that place. He said :

"We hope to be in El Obeïd in five weeks, if we do not die of thirst on the road. . . . The lack of water is terrible ; all the wells on the road are destroyed ; when we march from here we leave the Nile, and other rivers there are none ; and we cannot carry more water than we need for twenty-four hours. . . . The False Prophet will give endless trouble. He musters a great force, and disposes of over fifteen thousand good breech-loaders and fourteen cannons, besides holding two fortified cities, Bara and El Obeïd. The most important thing is that he commands well-mounted cavalry, and fanaticism makes heroes of all his people—a description which certainly does not apply to our troops. If our cavalry gives timely notice of attack from the Arabs, then all will go well ; but if they succeed in taking us by surprise, then we must be prepared for the worst. If they defeat us once, not one of us will return home, for then the entire Soudan will rise as one man. Khartoum and all will be lost. The people will then place unbounded faith in the False Prophet. This shows you that our position is by no means enviable. Yet I have not painted things darker than they are."

This letter was absolutely prophetic of what followed. As the army advanced after leaving the Nile, the Bedouins retired, destroying the wells and closing around its flanks and rear. At Kashgill, two days' march from El Obeïd, a great battle was fought. The Egyptians, already exhausted by heat and thirst, formed in a square, stood their ground with the courage of despair for three days without a drop of water. Of those eleven thousand men none survived except one hundred and fifty, carried off as prisoners to El Obeïd. Hicks-Pasha, his European of-

ficers, and Allah-ed-Deen, the governor-general, fell fighting to the last. Such entire extermination is only what must happen on the desert, for if an army can be cut off from water for three or four days, there is no need to fire another shot. Should any fugitives escape the sword or the lance, they fall exhausted within a few hundred yards, never to rise again. Von Seckendorff's ominous prediction was fulfilled to the letter. Not one man ever returned from that doomed army.

The battle of Kashgill was fought Nov. 1st–3d. Three days later another Egyptian force was destroyed at Tokar on the shores of the Red Sea, eight hundred miles from Kashgill, by the Mahdi's chief lieutenant, Osman-Digma who had stirred up the warlike Bishareens inhabiting the deserts between Berber and Suakim. Col. Moncrieff, the British Consul at Suakim who had volunteered to lead this force, was killed with eleven officers and one hundred and fifty men. One cannon and three hundred rifles fell into Osman-Digma's hands.

I have stated above that the news of these two disasters reaching London a few days after Mr. Gladstone's Guildhall speech announcing a gradual evacuation, put an immediate stop to all idea of reducing the British forces in Egypt.

The consternation in Cairo was immense, and with good reason, for all the troops in the Soudan except the enfeebled garrisons, had perished with Hicks-Pasha. Now, Khartoum, Sennaar, Kassala, Berber and even Suakim were in imminent peril. With them the entire Soudan would be lost, and the rebellion would endanger Egypt herself.

Once more the Khedive and his ministers turned

to their allies and guardians with frantic appeals for protection. The British Ministry's reply was that all the country above the First Cataract must be abandoned! . . .

Should the reader incline to believe that I am biased in my judgment of events by anti-British prejudices, I beg leave to state that nothing that I could say approaches the severity with which the course of the British government was denounced from the time of Ismaïl's deposition and even before, to the present time, by some of the most talented and prominent men of England, among whom are Prof. Dicey, Sir Samuel Baker, Henry Labouchere, Sir Henry Layard, and a number of others. I am not affected with either *anglo-phobia* or *anglo-mania*. Next after being an American (a good long way after, it is true), I would prefer being an Englishman. My judgment on this subject is formed upon British statements, and my narrative of the campaign is taken mainly from British accounts impartially presented and criticised.

I quote from a letter to the "The Times," dated Cairo, April 5, 1884, from Sir Samuel Baker, the African explorer and Gordon's predecessor as Governor-General of the Soudan, a man whose position and experience give uncommon value to his utterances upon the Soudan question:

"We have so completely abstracted every vestige of power and authority from the unfortunate Khedive, that he cannot even nominate his own officers in any branch of the military or civil services. Having divested the legal ruler of the country of all importance, we add insult to injury by utterly disregarding his personal existence in Egypt. . . . The so-called 'authority' of the Khedive was rudely, if not brutally, negatived by direct orders from Downing Street to abandon the Soudan against the wishes of the ruler, supported by his Ministry, who resigned *en masse* at the presumptuous intrusion of the British *dictum*.

"This act of unwarranted interference, by which an enormous area of the Ottoman Empire was wrested from its legitimate ruler and thrown into the direst anarchy, at once awakened Egypt to the hypocrisy of British declarations. The mask was for the moment cast aside. . . . *Coûte que coûte*, the Soudan was to be abandoned, and proclamations to that effect were issued without delay. The fact of such a proclamation bore an immediate and fatal result ; every tribe that would have remained faithful to the government if prepared to assert its power, was in self-preservation forced to abandon a government that had forsaken the most sacred duty of upholding the rights of those subjects who had declared their loyalty."

When Tewfik-Pasha was notified of the commands of the British Ministry, what manhood still survived in him after so many humiliations was aroused. For the first time he refused to obey, and declared his resolution to abdicate and to throw the responsibility upon England rather than submit to the sacrifice.

But this could never be permitted, for it would destroy the beautiful fictions of England's disinterested occupation of Egypt and non-interference with purely Egyptian concerns, and of the Khedive's supposed independence of action! A middle course was adopted. Tewfik was quieted by being permitted to call upon his suzerain-lord, the Sultan, for Turkish troops, provided that Turkey bore the expense and would bind herself to withdraw as soon as the Soudan was pacified. But this qualified concession was almost immediately withdrawn; and when Turkey prepared an expedition, England assumed the preposterous position of recognizing the Sultan's paramount rights over the Soudan, and yet ordering her ironclads to prevent, by force if necessary, the landing of Turkish troops in the Soudan. (See Sir H. Layard.) To quote from Prof. Dicey (*Nineteenth Century*, March, 1884):

"Put into plain English, the programme came to this : England refused to send troops to the Soudan herself ; she forbade Egypt to send troops ; she consented to

troops being sent from Turkey only under conditions which rendered their dispatch impossible. In other words, England insisted that Egypt should abandon the Soudan to its fate. Now if this abandonment had been confined to Darfour, Kordofan, and the Equatorial Provinces, which Ismaïl Pasha had added to his dominions, no objection would have been raised. But what Egypt was bidden to do was to give up Khartoum, the centre and head-quarters of her trade with Central Africa, to relinquish the possessions which had belonged to her since the time of Mehemet-Ali, to sacrifice all her garrisons and settlements in the Soudan, and to permit the establishment of a powerful and hostile state in the vicinity of her own defenceless frontier, and in command of the river on which she depends for her existence. She was bidden, too, to do this while our English army was occupying her soil with the avowed object of strengthening the hands of her government, while her own military resources were not yet exhausted, and while the armed assistance of Turkey was at her service upon terms which for her own part she was disposed to accept. Under these circumstances it is hardly to be wondered at if the Khedive and his ministers should have refused this programme."

A question suggests itself here. Why should England object to Turkey's sending troops to a dependency of her own empire, unless it was feared that this re-assertion of her sovereignty over Egypt might produce awkward complications in case that England, at some future day, should want to annex Egypt absolutely, according to her usual and time-honored practice?

Meanwhile the order to evacuate the Soudan had been prematurely announced, and its effect was to add new impetus to the rebellion. All the populations and the Bedouin tribes who had hitherto held a hesitating allegiance, waiting to side with the stronger party, now felt that their only safety lay in joining the Mahdi. If the evacuation had been secretly decided upon and quietly managed, the garrisons might have been safely withdrawn, but its imprudent announcement doomed them to destruction.

Scattered over that immense territory between Berber and Gondokoro, as large as France and Germany together, were 26,000 Egyptian troops and 20,000 non-combatants,

European and Egyptian merchants with their families who could expect no mercy, for the Mahdi had decreed extermination against all Egyptians and foreigners. What was to be their fate?

With that superb contempt for what they call inferior races, characteristic of the British ruling classes, the Ministry replied: "Let the garrisons be speared!"

A perusal of the English papers of that date will prove that I am merely stating the naked facts. Be it remembered to the credit of the British press and people, that a universal cry of indignation arose from them against the inhuman decree of their rulers. Gordon, that noble type of modern Christian chivalry, protested in these words:

"You have 6,000 men in Khartoum. You have garrisons in Darfur, in Bahr-Gazelle, and Gondokoro. Are they to be sacrificed? Their only offence is their loyalty to their sovereign. For their fidelity you are going to abandon them to their fate. You cannot evacuate, because your army cannot be moved. You must either surrender absolutely to the Mahdi or defend Khartoum at all hazards. The latter is the only course which ought to be entertained. . . . But if, in a moment of panic, orders are issued for the abandonment of the whole of the Eastern Soudan, a blow will be struck against the security of Egypt, which may have fatal consequences." *

Public sentiment had quickly become too strong to be disregarded; yet the government still refused to send troops. Again a middle course was adopted. Since Gordon was so bitterly opposed to abandoning the garrisons, let *him* undertake their rescue. His name and influence might relieve the difficulty. On the 18th of January, 1884, he was requested by the ministers to assume the task, and he left London that same afternoon.

* Gordon's words, "your army, your garrisons," when speaking to the British Ministry of the Egyptian troops, prove with what scorn he flung aside the hypocritical disclaimer of responsibility and solidarity with regard to the events in the Soudan.

His mission was proclaimed to be one of peace, and he was expressly ordered to abstain from all aggressive measures.

Stopping but one day in Cairo to confer with the authorities there, he crossed the Korosko desert accompanied only by his faithful comrade, Col. O. H. Stewart, a few loyal Bishareen sheikhs who guaranteed his safe transit, and a son of Zobehr-Pasha who, no doubt, was sent by his treacherous father as a spy. Gordon had declared that if he could not have an army he would go alone, and the only material aid given him was £100,000 in gold. The prestige of his name was expected to supply all deficiencies. He reached Khartoum in exactly one month (Feb. 18th). On his arrival he was received with fulsome protestations of loyalty by the principal sheikhs and all the demonstrations so dearly loved by the people of those regions. But he found the situation very different from what he had left it four years before. His disinterestedness, justice, and liberality had won him great personal influence and respect; for a governor-general who refused to fill his pockets was a miracle in the Soudan, and probably his sanity was somewhat doubted in consequence. But most of the good he had accomplished had been undone by his successors, and what was chiefly remembered now was his energetic suppression of the Central African slave-hunting. This was a grievance not to be forgiven by the slave-trade interest which comprised nearly the entire population of Khartoum. Their opposition was too powerful to be overcome, and it would render his mission impossible. This consideration compelled him to issue a proclamation reducing taxes, abolishing all monopolies, and removing restrictions upon slave-

buying and selling, if not upon slave-hunting. The registers and records of indebtedness to the government, the kourbashes and other instruments of punishment, were burned in front of the governor's palace. At the same time he sent the Mahdi a robe of state, and invested him with the rank of Emir or Sultan of Kordofan, both of which honors the Mahdi rejected with a defiant message, saying that his mission was from God and he wanted no dignities from infidels. This act of Gordon was an error, for it was construed as a confession of weakness, and it seemed absurd to offer the Mahdi the gift of a province whose possession was already his own by the conquest of his victorious arms.

The condition of affairs is so well described by Sir Samuel Baker that I quote his own words:

"A few weeks' reflection brought the natural reaction. The discontented saw their opportunity—Gordon had no army to support his moral power. Morality is held in slight respect in the Soudan unless backed up by military material. With all the best intentions, Gordon found his overtures rejected. His proclamations were ignored, and the announcement of abandonment was corroborated by the dispatch of the sick and incapables towards Cairo, together with many of the civil employés. It became impossible for the wavering tribes to continue loyal. Had Gordon been supported by a military force sent up from Cairo, he might have postponed the movement of evacuation, but when once assured of the reality of that fatal act, even the loyal tribes threw in their lot with the general cause of insurrection.

"In the meantime the Egyptian garrisons upon the Red Sea coasts were threatened by the gathering forces of the rebels, headed by one Osman Digma, a slave-trader of evil repute in the Soudan, who had become an emissary of the Mahdi. The Egyptian forces were severely defeated, the British Consul Moncrieff was killed, and the garrisons of Tokar and Sinkat were invested by the victorious Arabs. Suakin was threatened, and it became absolutely necessary to equip a powerful force from Cairo for the relief of the beleaguered garrisons.

"'It was then that the ridiculous absurdity of British interference was exemplified. At the battle of Tel-el-Kebir we had destroyed the Egyptian army, and we had set up in its stead a model army of 6,000 men, under the command of General Baker Pasha, who was summoned from Constantinople by the Khedive of Egypt, with the sanction of the British Government, to reorganize and to command the Egyp-

tian forces. He had quickly resolved order out of chaos, and had gained the confidence and approval of the Khedive and all Egyptian authorities, when he was suddenly superseded by a British officer who was forced upon the Khedive (Sir Evelyn Wood), and the British Government, which pretended to restore the authority of the Khedive, dealt the first blow and crushed that authority by superseding the officer whom he had himself selected, and thrusting upon his acceptance an officer upon the active list. Thus the Khedive's army was taken completely out of his hands by way of proving our sincerity in restoring his authority.

"At the same time Baker Pasha organized the gendarmerie, which in military appearance rivalled the regular army. This civil army was too military for the taste of British officials, and an order was issued (not by the Khedive) by the English authorities that the military element must be eliminated, and the gendarmerie must consider itself a distinctly civil force; it must therefore drop the martial appellation and be termed 'constabulary.' It was not to be considered as a fighting force. Events pressed forward. The littoral of the Red Sea was in a blaze, and troops were instantly required. It will be deemed incredible, but at the first moment of actual necessity there were positively no available troops in Egypt. The regular army of Sir Evelyn Wood had been recruited on the agreement that they were not to be employed beyond the frontier of Lower Egypt; therefore they could not be called upon to serve in the Soudan. It was also determined that no British officers upon the active list should be permitted to engage in hostilities in that distant province, which had been declared to be beyond the sphere of British intervention. Here was a muddle. There was an army that was not allowed to fight, and this was the standing army of the Khedive, under Sir Evelyn Wood and a host of British officers. The gendarmerie of Baker Pasha had been reduced to constabulary, and were expressly told 'that they were only a civil force to be employed simply in Lower Egypt.' Thus, with all the expense of a most perfect military organization, there was not a single battalion to be found in a moment of grave emergency. This was the efficiency which resulted from a British administration. At the same time the garrisons of Sinkat and Tokar were surrounded by the enemy, and the brave defenders of the former were starving."

Sinkat, the only town between the Red Sea and Berber, was a summer-resort where the merchants and officials of Suakim repaired during the hot season. It was a small place, about forty miles west of Suakim, and it had been fortified and garrisoned since the troubles began, because its position in the mountains commanded the Suakim-Berber trail. For weeks it had been besieged by Osman-Digma's forces, and vain attempts had been made to relieve it. Tokar, another fortified position fifty miles south of Suakim and near the seashore, was also

besieged, and it was known in Cairo that unless relief was sent at once both those places must fall. Baker-Pasha was the only man available, but there were no troops. Zobehr-Pasha was employed to raise a force. The streets of Cairo and all the towns in Egypt were searched for blacks, and men were dragged off in chains to fill Zobehr's ranks; but at the last moment he was deprived of his command, and the bewildered blacks were forced into the railway train for Suez by cavalry with drawn sabres. These men, together with one thousand five hundred of the reluctant "constabulary police" drafted in spite of pledges to the contrary, and about one thousand Turkish Bashi-bazouks (Egyptian service), composed the unpromising materials out of which Valentine Baker was ordered to form an army for the relief of Sinkat and Tokar. Not only were they known to be averse to fighting, but most of them were suspected of sympathy with the Mahdi's cause. However, General Baker with this force, joined by five hundred more men dragged from different parts of Egypt, attempted to carry out his indefinite plans of campaign. He left Cairo on December 17th for Suakim which he proposed to make the base of his operations. He was given supreme military and civil command, with the power of life and death.

Probably no general ever proceeded on an expedition with an army less trustworthy and plans less definite than those of Baker-Pasha. For this he is not to be blamed. In consenting to assume the chief command he acted solely from a sense of duty, and for six weeks he labored incessantly to drill, discipline, and fashion into the semblance of an army the heterogeneous elements composing

his command. His original purpose had been to move first to the relief of Sinkat.

"The first march was to have been made to the foot of the hills seventeen miles away; on the second the forces would enter the hills by a pass three miles long, ending in a narrow gorge at the place were two hundred Egyptian troops had been killed. The latter point was to be temporarily fortified and garrisoned by two hundred men and two guns. The troops would after this get on open ground, and arrive at Sinkat by a long march of twenty-two miles. They would rest one day and on the next take off all the women and children from the town and return by four marches to Suakim, evacuating on their way the fort at the head of the pass, because there is no water there and consequently the post could not be held permanently. But Tokar was thrice attacked by the rebels before this plan could be carried out, and General Baker was directed to relieve that place at all hazards. This determination abandoned Sinkat to its fate. For a fortnight the garrison had been eating roots and tree leaves. It was an enfeebled band indeed which sortied to die amid the rebel hordes. Tewfik-Bey had harangued his men, saying that by fighting they might save themselves, but that by remaining they must die from hunger in a few days; flight was impossible. The men thus animated with Tewfik-Bey's spirit, destroyed the military stores, exploded the magazine, filled their pouches to the utmost with cartridges, and issued forth, six hundred strong, against the rebels.

"Osman Digma's hordes rushed to the attack. Tewfik-Bey and his men fought nobly. For a long time they repulsed every attempt to break their ranks. Finally superior numbers prevailed, and with a tremendous rush the rebels burst through one of the sides of the Egyptian square. A general massacre ensued, and not a soul escaped. According to the latest reports only four sick men, who were unable to take part in the sortie, the Cadi of Sinkat, and thirty women were spared by the rebels."

This disaster occurred on the 11th of February, 1884. On the 2d, Baker had sailed from Suakim and landed at Trinkitat, about fifty miles south. Thence to Tokar, the distance is only twelve to fifteen miles. This town, already noted for the defeat and death of Consul Moncrieff in Nov. 1883, was a small fortified post on a diminutive fresh-water creek which falls into the sea at Trinkitat. Baker began his advance from his intrenchments at that place on Sunday, Feb. 3d, with nearly 4,000 men, four Krupps and two Gatling guns. He had sent from Suakim to Cairo an urgent request for rifles to

replace the old muskets with which numbers of his troops were armed. In reply he received orders to try to force his way to Tokar without delay, and with the English officers connected with the expedition he began the march, expecting defeat. The spies had falsely reported that the roads were clear with the exception of small bands of rebels. On Monday forenoon a portion of the advance was attacked on the march, and the fight was begun by a few Arab horsemen charging upon Baker-Pasha's cavalry which fled. Baker then formed a square which the enemy surrounded. The Bashi-bazouks then fled in confusion, and the gunners deserted their guns. Baker-Pasha was several times surrounded by the enemy, but, with his staff, managed to cut his way through. All the camels, baggage, and artillery were lost in the battle. Most of the Egyptian officers and men bolted. Col. Sartorius tried hard to rally them, but without success. The Europeans behaved splendidly. Col. Sartorius narrowly escaped with his life. The enemy pursued almost into Trinkitat. The Europeans, police, and Turkish infantry were cut to pieces. Twenty-five hundred men were killed, including fourteen European officers. No mention is made of the wounded, for none survived except those who were able to retreat with the routed army. Baker, with the remnant of his force, succeeded in reaching Trinkitat, where they re-embarked on the British gunboats and returned to Suakim. This event took place just at the very time that Gordon was speeding on his way to Khartoum across the Korosko desert. The news met him at Berber, from which place he telegraphed that in spite of Baker's defeat he was still confident of success.

Meanwhile Osman-Digma, reinforced by the conquerors of Sinkat, continued the siege of Tokar, which he captured on the 21st. He then blockaded Suakim completely on the land side and harassed its garrison by nightly attacks. His double success had gained him the accession of the Bedouin tribes occupying the country between Suakim and Berber, who until then had been undecided which side to take. The capture of 4,500 rifles and ten guns (including those taken in Tokar), with abundance of ammunition, helped him materially in his subsequent battles against Gen. Graham.

In the meantime Gordon had reached Khartoum and, as we have seen, had found the situation far different from what he had expected. His efforts were now concentrated upon strengthening the defences of Khartoum, avowing his purpose of retaining its permanent possession. By this means he hoped to secure the safe retreat of the garrisons in the far south. He was willing to abandon the country west of the White Nile and south of Khartoum, but he was firmly convinced of the absolute necessity of retaining possession of the Eastern Soudan. His views, as expressed before he left London, were so judicious and so forcibly expressed that I quote them here:

"On 'Chinese' Gordon's arrival in England he was interviewed by a correspondent of the *Pall Mall Gazette* on the situation in the Soudan. The following is a transcript of Colonel Gordon's remarks:

"So you would abandon the Soudan? But the Eastern Soudan is indispensable to Egypt. It will cost you far more to retain your hold upon Egypt proper if you abandon your hold of the Eastern Soudan to the Mahdi or to the Turk, than what it would to retain your hold upon the Eastern Soudan by the aid of such material as exists in the provinces. Darfur and Kordofan must be abandoned. That I admit; but the provinces lying to the east of the White Nile should be retained, and north of Sennaar. The danger to be feared is not that the Mahdi will march northward through Wadi Halfa; on the contrary, it is very improbable that he will

ever go so far north. The danger is altogether of a different nature. It arises from the influence which the spectacle of a conquering Mohammedan power, established close to your frontiers, will exercise upon the population which you govern. In all the cities of Egypt it will be felt that what the Mahdi has done, they may do; and, as he has driven out the intruder and the infidel, they may do the same. Nor is it only England that has to face this danger. The success of the Mahdi has already excited dangerous fermentation in Arabia and Syria. Placards have been posted in Damascus calling upon the population to rise and drive out the Turks. If the whole of the Eastern Soudan is surrendered to the Mahdi the Arab tribes on both sides of the Red Sea will take fire."

As to the provinces to be abandoned, Gordon's plan was to turn them over to the descendants of their ancient sultans. But this idea was altogether impracticable. In three generations those families had sunk into obscurity, and the new rulers would be slave-hunting chiefs like Zobehr-Pasha, Osman-Digma, and Abou-Saoud. Or else, the Mahdi, who announced his mission to be the extermination of all Turks and foreigners and the conquest of the country down to the sea, would establish an empire so strong and aggressive as to be a permanent and formidable menace to Egypt.

Up to this time nothing had been done to nullify the repeated declaration that no British troops would be sent to the Soudan. But Gordon had been in Khartoum *just one day* when 5,000 British soldiers, under the command of General Sir Gerald Graham, sailed from Suez for Suakim on the 19th of February, 1884, and attacked the Mahdi's lieutenant, Osman-Digma, at the very moment when Gordon, in pursuance of his instructions, proclaimed his mission to be one of conciliation, and offered the Mahdi peace and recognition!

Why this contradictory course of action? If England had no interests in the Soudan, why was Graham sent there? Not to relieve Sinkat or Tokar; it was too late

for that. Not to defend Suakim, for one battalion and two gunboats were amply sufficient, and Admiral Hewett was at that time commander of that post, with 500 marines and several war-ships. Then what for? To avenge the death of Moncrieff and Hicks-Pasha in November and Baker's recent defeat? But these were purely Egyptian disasters in which England had disclaimed all responsibility or concern. Moncrieff had left his legitimate consular duties to volunteer with an Egyptian expedition, and Baker was no longer a British, but an Egyptian officer, as were Hicks and his comrades, and certainly England's honor was in no way affected by their disasters. Why then attempt to avenge them by waging war on the Red Sea while proclaiming peace on the White Nile? This action of the British government can be attributed only to the incredible vacillation which seemed to pervade all their Egyptian policy, or else to a spirit of "Jingoism" which assumed that England's honor demanded that she should avenge Egyptian disasters merely because Englishmen had been in command, while yet refusing to admit that this national honor was most deeply involved in shielding from harm an ally whom she had tied hand and foot under the guise of protection. The double-dealing course now adopted was certain to defeat the avowed object of Gordon's peaceful mission, and to expose his life to the most imminent peril.

Accordingly, immediately after Graham's invasion, we find Gordon attacked at Khartoum and asking most urgently that British, Indian, or Turkish troops be sent to his support.

I will here present an outline of Graham's campaign, which, from the nature of the case, is necessarily drawn

from British official reports and the accounts of English war-press correspondents.*

On the 28th of February, 1884, General Graham landed at Trinkitat with 4,000 effective men, and on the 29th he attacked Osman-Digma's position at Teb, about eight miles from the sea. The British were formed in one square with cavalry covering the front and guns at the angles. They advanced with a degree of caution far greater than would have been displayed before a civilized foe, and the desperate fighting of the Arabs showed that this caution was well timed. The weak intrenchments, armed with the captured guns, were not carried until after four hours of stubborn conflict. Osman-Digma's forces were estimated at about 10,000 men, of whom not more than one fifth were armed with Remington rifles. The rest were supplied with scimetars and spears. But neither the rifles nor the guns under the Arabs' manipulation caused any great loss among the British. The wounds were chiefly received at close quarters during the fanatical charges or rushes upon the troops.

"The rebels were in no military order, but were scattered here and there, so as to take advantage of the abundant cover which the ground afforded. They clung to their position with desperate tenacity. There were 2,000 rebels directly in front, while many hundreds hung around the two sides of the square.

"As the British moved forward, firing as they advanced, the rebels, armed with spears and huge cross-hilted swords, rose within two hundred yards of the advancing lines and rushed against the British at breakneck speed, heedless and fearless of death. They fell right and left, though some of the brave fellows reached within five paces of the square. None of them bolted; they only fell back sullenly when they were forced. The British pursued them as far as the wells of Teb, where the

* It is a matter of regret for the sake of historical accuracy that there are no other sources of information. It would be curious and interesting to have the Arab accounts and *their* estimates of the British numbers and losses. Unfortunately neither the Mahdi nor Osman-Digma wrote any reports or had any war-correspondents with them.

rebels made their last stand. Sheiks who advanced empty-handed, to show that they bore charmed lives, were stricken down with bayonet thrusts.

"The Highlanders carried the next earthwork, capturing three guns. At the end of four hours of arduous fighting the British gained possession of the rebel camps, of the huts, and the wells.

"The cavalry on the right flank charged the retreating rebels, who did not bolt, but struck the troopers who rode among them, giving blow for blow. A splendid display of heroism was made by three mounted rebels. They resolutely maintained their ground against the shock of two cavalry regiments before being cut down. They continued to fight after the third charge, killing several soldiers and wounding Colonel Barrow with their spears. The enemy retired very slowly, and in consequence of this the British kept up their firing for a long time after the fortunes of the day had been decided.

"All advices concur in acknowledging that the Arabs fought with desperate bravery. Osman Digma brought 12,000 men into the field. The most of these took part in the charge against the British lines. During the entire battle the Arabs' want of organization and regular discipline constantly exposed them to the deadly effect of the continuous fire which the British poured upon them hour after hour."

The British loss was stated at 24 killed and 147 wounded, and the Arab loss at 2,000. These figures describe more eloquently than words the reckless bravery of these sons of the desert, charging with naked breasts and only sword and spear upon the serried ranks of a British square pouring into them the murderous fire of breech-loaders and machine-guns.

On the day following the battle of Teb, Gen. Graham entered the ruins of Tokar and recovered the guns lost by Baker-Pasha one month before; after which he re-embarked his troops and returned to Suakim to operate against Osman-Digma, who had rallied his forces near that place.

Suakim derives its importance from being the best seaport on the Red Sea, and the terminus of the great caravan route which leaves the Nile at Berber and brings to the sea-board the trade of the Soudan. Its population is about 5,000. The government buildings and the best

portion of the town are built of white coral rock upon a coral island, separated by a channel 200 yards in width from the mainland on which are the suburbs, bazars, etc. A narrow causeway serves as communication between the town and the mainland. The only supply of water is brought on donkeys and camels from very indifferent wells some two miles distant; but since the British established a garrison they have been supplied with condensed water from their steamers. A line of earthworks has also been erected to cover the wells. The island-town, if defended by a gun-boat on each side of the causeway, is perfectly impregnable to any attack that the Bedouins could make against it, but the suburbs had been continually harassed by Osman-Digma since August, 1883. He had now concentrated his forces at Tamaï wells, only eleven miles from Suakim.

On the 12th of March Gen. Graham advanced to attack him. The difficulty of securing a sufficient provision of water for even that short distance rendered his movements very slow. He bivouacked that evening within two miles of the enemy who kept up a desultory fire during the night. The British left their bivouacs at 8 o'clock, marching in two squares of one brigade each, about 900 yards apart. This is a summary of the British accounts of the battle.

"They moved in echelon, the Second brigade leading. This brigade was composed of the Forty-second, Sixty-fifth, Royal Marines, and Naval Brigade, with Gardners and Gatlings. The First brigade comprised the Eighty-ninth, Gordon Highlanders, Sixtieth Rifles, with Royal Artillery nine and seven-pounder batteries, and Royal Marines. As the Second brigade moved off to the left or southerly direction, led by General Davis, it was joined by General Graham and his staff. We could plainly see the enemy ranged all along the hills on our front and right. Their black skins stood out boldly against the glare of day. Some were within twelve hundred yards.

"Meanwhile the cavalry, which had taken up a position on our left rear, sent

forward two squadrons, together with the Abyssinians, to skirmish. These were quickly engaged, and a hot fire was soon raging. The enemy coming on, the skirmishers fell back, and the Second brigade advanced seven hundred yards, firing as they went. The troops had opened out nearly into line, their rear to a great extent being covered by the First brigade, which was half a mile away on our right. As we gained the edge of the nulla the fire became very hot from our side, the enemy mostly contenting themselves by attempting to rush at us with their spears and swords. Our men could not easily be got, despite trumpet calls and officers' shouts, to reserve their fire and aim carefully. In a few minutes our line was obscured by dense smoke from our own rifles, and under cover of this the enemy crept up the sides of the nulla, and a succession of rushes by our brave and resolute foes was made at the troops. The Sixty-fifth, who were on our right, marines on their left, and Forty-second on extreme left, were nearest to the brink of the nulla, which, on their front, made a bend inward toward them. The enemy appear to have gathered there one thousand strong. Creeping up under cover of the smoke and sloping ground, they dashed at the marines and Sixty-fifth. A hundred swarthy Arabs came bounding over the rocks up the plain, spear and sword in hand. Half were instantly shot down, but thirty or forty were able to throw themselves upon our bayonets, giving and receiving fearful wounds.

"Quick as lightning the rush increased, and in less time than it takes to tell the Sixty-fifth gave way, falling back upon the marines. The bulk of the regiment crowded in upon the marines, throwing them in disorder, and back everybody was borne in a confused mass, men and regiments being inextricably mixed up. General Graham and his staff tried their best to hold and rally the men, and General Davis and all the officers labored to get the troops to stand their ground in an orderly way. A large force of rebels charged down upon the Second brigade like men inflamed with desperate ferocity, shouting and yelling and utterly heedless of death, and succeeded in capturing all the Gatlings and Gardners belonging to the brigade, which was driven back eight hundred yards.

"By this time the fire from the First brigade on our right as well as front, and the cavalry on our left, held the Arabs, and the officers succeeded in checking the retreat; the Black Watch, who were fairly in hand, and a portion of the marines largely assisting in stopping what might have been a much more serious disaster. The brigade was reformed, and the men who had got out of their regiments were sent into their own lines again. I must revert to the way in which several hundreds of marines and Highlanders fought back to back, firing and retiring in excellent order. They were over two hundred yards to the brigade front when it was halted and reformed, and to their great coolness and steadiness is largely due the final success of the day.

"The troops being rallied, Gen. Graham immediately ordered a bayonet-charge, the gallant troops went for the enemy, and a fearful hand-to-hand fight ensued for the possession of the guns, which the British finally succeeded in recapturing. Following up their advantage, they continued to press the rebels, who would not run, but continued to retire slowly, striking blow for blow, until they were driven beyond their camp, when Gen. Graham ordered a halt, quickly followed by a for-

ward movement. As the British advanced, men sprang up sometimes within two hundred yards of them, armed with spears and brandishing a huge shield. These would charge down upon the British ranks without hesitation, at breakneck speed, until the latter's bullets laid them low. The British stormed up the works where the rebels were in force. The gallant blacks, with no thought of flight or surrender, held out their spears and shields against bullets and bayonets until the trenches all around were like one grave.

"The next objective point was the second intervening ridge, eight hundred yards off. The red granite boulders and rocks were rugged and sharp and hot, and the march was a most trying one. With a cheer the men took the first ridge, firing, as they went along, occasional shots at the enemy's main body, whom we could see gathered on our right on the second ridge. The Arab's fire in reply to ours was feeble and wild, and they soon began trotting off towards the mountains as we advanced. Gen. Graham, with a portion of his staff, directed the advance, and, with a ringing cheer, we carried the second ridge, the defence of which was insignificant. Gaining the top, we saw in the valley Tamaï, one hundred and eighty feet below, the tents and huts composing the camp of Osman Digma. There were very few Arabs about, and of these the troops soon made short work. The Arabs retired before the English slowly and sullenly. They were defeated, but not put to rout. They walked away as if sauntering through a bazaar, with arms folded or swinging at their sides. They were often shot down, but this did not hasten 'their companions' speed. It was impossible to take prisoners. The wounded Arabs would lie motionless, without uttering a single cry or moan, and watch their chance to stab the advancing British with knife or spear. The victors walked among the wounded as among so many vipers. A wounded Arab killed a British marine during the night. Another attempted to stab Colonel Herbert Stewart while his aide-de-camp was giving the wounded man water.

"The rebels entered the second square upon their hands and knees, beneath the muzzles of the Gatling guns. They then commenced slashing with their weapons, doing terrible execution. The British were no match for the rebels at close quarters."

After four hours' fighting the Bedouins sullenly retired from the field and the battle of Tamaï was won.

The British loss was one hundred killed and one hundred and fifty wounded. The Arab loss was estimated at over two thousand.

After the battle, Osman's camp was burnt, and the British returned to Suakim the next day. They were victorious, but it had been a very narrow escape; for, if the First Brigade had been broken like the Second, none

but the mounted men could ever have cut their way back to Suakim.

This retreat, after a victory, illustrates the peculiar difficulties of warfare in the Soudan. It was impossible to pursue the Arabs among the foot-hills, where the British could not retain their formation in squares, and where the enemy could lie in ambush in every ravine. In fact, if the Arabs had avoided battle on the plain from the first, and had drawn the British into the hills, the result might have been very different. But the insuperable difficulty was the want of water. Not one drop could be found in the hills or on that arid plain scorched by tropical heat, so that the retreat was inevitable. It will be seen further on how the Bedouins manage to supply themselves with water where Europeans would perish for want of it.

The expectation entertained that the Arabs would be discouraged by their heavy losses at Teb and Tamaï was quickly dispelled. Osman-Digma reoccupied his former position as soon as the British retired, and harassed them in their lines around Suakim by nightly alerts. General Graham, hoping to crush him by a final defeat, made a second advance. His purpose was to attack Osman's position at the wells of Tamanieb, a short distance beyond Tamaï. Several days were consumed in establishing a water depot half-way, and the difficulty of the undertaking may be imagined when it is known that every drop had to be brought in goat-skins on camel-back from the condensing steamers in the harbor or the brackish wells outside of the town. On the 24th of March the troops moved out from their camp, and before they had advanced eight miles, one fourth of the soldier gave out

entirely, and were left behind, and another fourth dropped to the rear exhausted, following as best they could after being relieved of their guns and cartridge-belts which were packed on camels. On that plain the thermometer rises to 120° or 130° in the sun in March every day, (150° or 160° in July and August), and this terrible heat which Europeans cannot withstand, is just enough to make the Bedouins feel comfortable. This and the absolute lack of water are some of the points completely overlooked by those who find it so easy to plan and criticise campaigns from the "Horse-Guards" in London or the Head-quarters at Cairo. It is certain that if Osman-Digma had known to what helpless condition the fearful heat had reduced the British column on that march, he would have attacked it then and there, and a massacre like that of Hicks-Pasha would have occurred. But unconscious of this circumstance, and warned by his experiences at Teb Tamaï, he had resolved to avoid another encounter with the British on the plain, and to draw them into the hills. Accordingly, his forces slowly retired, skirmishing from a distance, inflicting no loss and suffering but little. On the 26th, starting very early from their water-depot, the British reached the wells of Tamanieb, where the men and horses slaked their thirst. This slight skirmish was magnified into a battle, and the English papers announced in big capitals the capture and destruction of the "*town* of Tamanieb," when, in fact, this was the name of the wells; for no town was ever built on the desert. What was burnt was Osman's camp of brush huts, such as he would leave behind him at every change of position. The most valuable object captured at Tamanieb, as stated by the English papers,

was Osman-Digma's frying-pan, which had the honor of being sent to England as a trophy. On the following day, General Graham returned to Suakim with all his forces, and on the 1st of April he re-embarked, leaving only a battalion of marines and some war-vessels to hold the place, and declaring the campaign to be at an end.

Yes, it *was* at an end; but not because its object had been accomplished, or because Osman-Digma was conquered, but because it was evidently impossible to continue it. General Graham was too skilful a soldier not to know that his troops could not follow the enemy under a torrid sun and through waterless deserts and mountains, and that if they remained at Suakim during the summer, the climate would destroy them. But the departure of the British was inevitably construed as a triumph for the Mahdi's cause. All the wavering tribes joined his standard, and from that time forward Suakim was closely blockaded, if not besieged, from the land-side.

Meanwhile the news of Graham's invasion had reached Khartoum and neutralized all the effect of Gordon's peaceful protestations. Before the middle of March he was attacked at Khartoum, and then began that wondrous defence, whose details will probably never be fully known, since its hero has perished. Never was there a brighter illustration of the power of a strong will and an upright and noble mind. One man alone, forsaken by his government, without help, an utter stranger in ideas, language, customs, and religion, was enabled by the mere force of his character to mould into a fighting army a heterogeneous crowd of Egyptians, Soudanese, and negro savages, and to hold them in hand for ten months, under hardships and privations, in spite of their natural and

religious sympathies all favorable to the Mahdi's cause. The same wonderful fascination over barbarians that had enabled him to conquer the Tae-Ping rebellion in China was exhibited here in Khartoum.

It was not long, however, before he became satisfied of the impossibility of rescuing the garrisons, or even holding Khartoum more than a few months without aid, and he made repeated and urgent requests to his government to send him British, or Indian, or Turkish troops, or, as a last resort, to send Zobehr-Pasha, he being the only man, in Gordon's judgment, possessing sufficient influence and force of character to organize a government and prevent utter anarchy after his own retirement. Perhaps Zobehr did possess the ability, but he was a double-dyed traitor, and at that very time was in secret communication with the Mahdi.* If he had been sent to Khartoum he would undoubtedly have betrayed Gordon to his death in revenge for his son Suliman's execution. For once the Ministry acted wisely in declining to send him. But why did they still refuse to send troops when it became evident that without military support Gordon's mission must fail and he must become the victim of his own heroism? The following extracts show in what light Gordon viewed the action of his government:

"LONDON, May 5, 1884.—Parliamentary documents give a dispatch to Sir Evelyn Baring from General Gordon, dated Khartoum, April 16th, in which he says: 'As far as I understand the situation you say there is no intention of sending relief here or to Berber. You refuse me Zobehr-Pasha. I consider myself free to act according to circumstances. I shall hold on here as long as I can. If I can suppress the rebellion I shall do so, otherwise I shall retire to the equator and leave you the indelible disgrace of abandoning the garrisons of Sennaar, Kassala,

* This fact having been discovered after the fall of Khartoum, he was imprisoned at Gibraltar and afterwards banished to the Island of Cyprus and deprived of his honors and emoluments.

Berber, and Dongola, with the certainty that you will eventually be forced to smash up the Mahdi under great difficulties if you would retain peace in Egypt.'

"The documents include a telegram from Colonel O. H. Stewart to Sir Evelyn Baring, in which he says: 'General Gordon has acquainted me with your intention not to relieve Khartoum. It is proposed that I shall go to Berber, trusting to the success of your negotiations for the opening of the Suakim and Berber route. Doubting, however, success, so far as the Berber road is concerned, unless it is opened by advancing troops, I am inclined to think my retreat safer by way of the equator, and shall, therefore, follow General Gordon's fortunes.'"

Still the Ministry seemed unable to decide upon any course, and Gordon's appeals remained unheeded. Some of them were deeply pathetic. In one of a later date he says:

"How many times have we written asking for reinforcements, and calling your serious attention to the Soudan, and no answer came? Men's hearts become weary of delay. While you are eating, and drinking, and resting in good beds, we and those with us, soldiers and servants, are watching night and day, trying to quell the movement of the Mahdi."

It certainly seems that a strange indifference to Gordon's fate was exhibited at that time by the government. It was officially stated in the House of Commons that he had no orders to remain in Khartoum if he found his mission impracticable, and that he was perfectly free to return when he thought proper; a declaration which seems like bitter mockery in view of his perilous situation; for at that very time a number of non-combatants that he had attempted to send to Lower Egypt for safety were massacred at Shendy with their escort of 500 soldiers. After Graham commenced hostilities at Suakim in March, there was no time when Gordon could have escaped northward beyond Berber, for his steamers could navigate no farther, and the insurgent tribes held all the country below. A reference to the debates in Parliament on this question shows the position taken by the Ministry:

"On the 12th of May the Right Hon. Sir Michael Hicks-Beach, Conservative member for East Gloucestershire, moved in the House of Commons his motion of May 2d, that the House regrets that the course of the government has not tended to promote the success of Gen. Gordon's mission, and that steps to secure his personal safety have been delayed. The honorable gentleman, in making the motion, said he did not mean to question the wisdom of the government's policy in demanding the evacuation of the Soudan by Egypt. What he called in question was the present conduct of the government toward that country. He called in review the circumstances which led to the departure of Gen. Gordon to the Soudan. 'The object of his going,' Sir Michael said, 'was to bring about the peaceful evacuation of the country. A more heroic offer than that made by Gen. Gordon was never made by living man. Yet when he arrived at Khartoum the government, instead of seconding his proposals, negatived them. With strange inconsistency the government insisted upon a pacific policy in one part of the Soudan and went to war in another part, thereby destroying any chance which Gen. Gordon might have had for carrying out his mission. The government was worthy of blame for not having sent assistance from Suakim. They have practically deserted the brave soldier, the Christian hero, in his hour of peril. This is the general feeling of the entire country. England now demands that Gen. Gordon and those who trusted him shall be rescued.'

"Mr. Gladstone, on rising to speak in defence of the government's course, was greeted with hearty and long-continued applause. He congratulated Sir Michael Hicks-Beach on his forcible speech, but strenuously denied that the government had deserted Gen. Gordon. Continuing, the Prime-Minister denied that the government had failed to do one single act that was for the safety and success of Gen. Gordon. 'The charges which the honorable gentleman has just preferred against the government are absurd. They can only be accounted for by his lack of knowledge of the true facts.' Mr. Gladstone thereupon referred to official dispatches to prove Gen. Gordon's security, and to justify the action which the government had taken. He contended that the charges failed to note the fact that Gen. Gordon had orders to resort to military force if peaceful measures should not prove successful. 'The demand of the honorable gentleman,' he insisted, 'amounted to a war of conquest against a people struggling to be free. The war which the Mahdi is waging is a war for freedom. Is it that which the honorable gentleman wishes England to put down?'"

It is fortunate for Mr. Gladstone that his fame does not rest upon the course of his Cabinet in the Soudan question. To err is human, and great as he undoubtedly is as a statesman, it cannot be denied that he erred grievously in this matter, probably led into mistakes by the representations of military men on whose judgment of

professional subjects he naturally thought he could safely rely. He must have been himself deceived as to "the true facts" when he spoke of "Gen. Gordon's security"; and his statement that "Gordon had orders to resort to military force if peaceful measures should not prove successful" seems absolutely absurd in view of the fact that he had been sent without a single soldier, that all the force available for active operations had been destroyed with Hicks-Pasha, and that Gordon had no force whatever except the garrison of Khartoum, already insufficient for its defence, as well as unreliable and wavering in its loyalty. Furthermore, if, as Mr. Gladstone said, "the Mahdi was waging a war for freedom," which England should not put down, what was his lieutenant, Osman-Digma, fighting for that he should be crushed? If the Mahdi's forces ought not to be opposed on the White Nile, why should Graham have been sent to slaughter them on the Red Sea?

By this time public sentiment had become too powerful and excited to be satisfied by such subterfuges, and it compelled the Ministry to organize an expedition for Gordon's relief. Its purpose was emphatically declared to be, "*Rescue and retire.*"

This tardy determination having been reached, the first step was evidently the selection of the best line of operations, and this selection must be the result of a thorough study of the country, all the more necessary because war in the Soudan has to be carried on under circumstances so essentially different from those prevailing in other lands, and which are these:

I. Outside of the very narrow valley of the Nile the country furnishes *absolutely nothing* for the support of

an army, which must therefore carry all its supplies, including even forage for its animals.

II. There are no roads and no vehicles in the Soudan—only camel-trails, and every thing must be transported on camel-back.

III. And most important of all, the Soudan is a rainless, waterless land. Away from the Nile there are no rivulets, creeks, or springs—nothing but rare and scanty wells at long intervals, or rocky reservoirs in deep ravines, like those of Gakdul and Abou-Klea, where the rain-water collects during the brief rainy season. Droughts of two and three years' duration are not uncommon, and had just occurred when I travelled over the deserts on both sides of the Nile in 1873, '74, and '75. In such seasons great numbers of cattle, and even camels, perish. No animals are used for transportation except camels, for they alone can travel five days without water, even in summer, and on the caravan routes wells are often that far apart. Consequently water sufficient to supply men (and cavalry and artillery horses in the case of an army) has to be carried in goat-skins which waste a large proportion by evaporation. From my experience of 6,000 miles of desert travel I judge that every 1,000 men, with the usual proportion of horses in an army, would require 500 camels for water alone, and at least 800 more for ammunition, supplies, forage, etc. This is what renders all long desert routes impossible for a European army. If Gen. Herbert Stewart succeeded, not without much suffering from hunger and thirst, in crossing the level Bahiuda plains (as will be seen later), it was because the distance was only 150 miles, the desert less arid, and the wells much closer than the average; besides which he had

3,500 camels for 2,500 men in the lightest possible marching order, for his rations gave out on the road.

This vital necessity of a certain and abundant supply of water makes it self-evident that no British army, even if no larger than 4,000 or 5,000 men, can operate in the Soudan except along the Nile, which is the *only* unfailing supply.

Had this fact been recognized in time, four months would not have been wasted in vacillating about the route, and these four months gained would have saved Gordon.

I make the charge without reserve or hesitation, that the failure of Wolseley's relief expedition was due to no other cause than the inconceivable and inexcusable ignorance of the British civil and military authorities in Egypt concerning the country which they had virtually occupied for more than six years; surely time enough to have learned all about it. More than this, no greater mistake could be made than to suppose that the Soudan was a *terra incognita.* So far from it, every route from Cairo to the White Nile has been an avenue of trade and travel for a thousand years, and is as well known as was the old national stage road between Baltimore and Wheeling before the days of railroads.

Furthermore, at the War Department in the citadel of Cairo, occupied as head-quarters by the British staff, there is any number of the most accurate and complete maps and reports of that region, made by French, English, Italian, and American engineers, officers, and explorers—some as recent as 1878, and containing the most minute information. Most of these documents are to be found also in the principal libraries of Europe and America. So

that ignorance of the geography, topography, and water supply of the Soudan routes was absolutely inexcusable, especially in a military staff whose first duty was to learn these very things.

There are three routes from Cairo to Khartoum. (See the map.)

I. By the Nile to Korosko, crossing the desert and striking the Nile again at Abou-Hamed.

II. By the Nile all the way on or along the river.

III. By Suez and the Red Sea to Suakim. Thence across the desert to Berber, and thence to Khartoum by the river.

Let us examine them in order.

I. The first follows the Nile to Korosko, 690 miles above Cairo and 100 miles below the second cataract. Here it leaves the river and strikes across the great bend of the Nile. It is 500 miles shorter than the all-river route, but, although one of the most frequented by caravans, it must be ruled out of military operations, for it crosses one of the worst deserts in the Soudan, consisting of hard gravel plains diversified with zones of deep sand and rocky ridges, without a bush or blade of grass. The camels, which find some grazing on other deserts, have to carry grain on their backs for their own consumption on this one. It is 250 miles across, with only one well—half way—so scanty that it can supply only some 400 camels per day, and so brackish that its name is *Moora—bitter*. None but camels and Bedouins can drink its water. Caravans of 100 or 200 camels cross this desert by forced marches, as I did, in seven days, carrying drinking water to last from Nile to Nile, but no European army could cross it at all. Meeting the river again at

Abou-Hamed, the route follows the river or near it 133 miles to Berber. At this point the Nile again becomes navigable 225 miles to Khartoum. Total distance from Cairo 1,298 miles.

The Korosko desert is one of those that the Arabs call *Atmoors*, in contradistinction from the *Berreeyeh*, or wilderness in which there is vegetation as well as game, and where the Bedouins roam with their flocks, though cultivation is impossible for want of rain. The Atmoors are entirely destitute of vegetation, and consequently of animal life, excepting only the ostrich and hyena, which cross them swiftly by night, and the ever-present vultures hovering over the caravans by day. Nothing relieves the glare of the yellow sand. The marches are terrible, and yet it is worse to halt during the day than to keep in motion, for the fearful heat makes rest or sleep impossible even under the tents, with the burning sand under you and the vertical sun overhead. The Korosko atmoor being one of the great avenues of trade, the trail is perfectly well marked by the skeletons of camels, averaging over 200 to the mile, by my own actual count. Thousands of these animals perish of exhaustion on this route every year. The atmoors are generally from six to ten days' march across, and are like oceans which caravans traverse upon their desert-ships, but where it is death to tarry.

II. The route following the Nile continuously fulfils the paramount condition of insuring an unfailing supply of water, but it presents the disadvantage of being the longest and slowest of all. From an engineer's point of view it is divided into three sections.

The first, from Cairo to the second cataract (795 miles), is travelled every winter by hundreds of tourists in daha-

beahs and Cook's steamers, and is as well known as the Hudson from New York to Albany. It is navigable at all seasons, but always best at high Nile. Trans-shipment is made at the first cataract, by the aid of a five-mile railway around it, but from August to January, small steamers can be hauled over it.

The second section, from the second cataract to Berber, and above to Metemneh, where Genl. Herbert Stewart struck the Nile again after crossing the Bahiuda desert, has been thoroughly explored by the eminent civil-engineer Sir John Fowler, who devoted many winters to surveying and locating the projected Soudan railroad for Ismaïl-Pasha. Nothing can be more complete than his report, printed in London, together with his map, accurately marked off in sections of fifty kilometers, and from which the accompanying map is partially compiled.* This section, from the second cataract to Berber, is obstructed by numerous other cataracts, rapids, and shallows, making its navigation very difficult for all but the native craft called *nuggars*. The difficulty of navigating this great double bend, or *S*, of the Nile is what forces the Soudan trade away from the river at Berber to seek an outlet at Suakim on the Red Sea. It was sadly demonstrated by the tragic fate of Col. O. H. Stewart, in Sept., 1884. Although the Nile was at its highest, and his steamer had passed safely over the fifth cataract (which, when I saw it at low water, seemed impracticable for any boat), he was wrecked at the fourth cataract, half way between Abou-Hamed and Korti, and was massacred by the Bedouins with his entire party. Nevertheless the

* This map was engraved for the *Century Magazine*, to illustrate my article on the Soudan, in the No. for March, 1885, and its use has been courteously granted to the Am. Geogr. Soc., by the editors of the *Century*.

entire distance is fairly navigable for the native boats (larger than Wolseley's whale-boats), provided always that advantage is taken, as it should be, of the proper stage of the Nile. It is also quite practicable for the cavalry and artillery horses, with part of the baggage on camels, to follow along the banks of the river, keeping abreast with the boats.

The third section is of easy navigation from Berber to Khartoum, and almost equally so thence nearly to the great equatorial lakes. The chief objection to this all-river route is the length of time it consumes.

The last route to be considered is the Suakim-Berber, and as the mistaken predilection in its favor has been the chief cause of the British failure, I will describe it in some detail.

I must be permitted to state here that in an "Open Letter," written in June, 1884, and published in the September No. of the *Century Magazine*, in an illustrated article, written as early as September, 1884, though published in the *Century* for March, 1885, and in a letter to the *N. Y. World* of March 1, 1885, I proved conclusively that the Suakim-Berber route is utterly impossible for a European army, while hostile Bedouins hold the deserts. I predicted further that the projected railroad would never be built, and that the British would never advance twenty miles from Suakim, all of which predictions were verified by subsequent events.

I am not astonished that the Suakim route was the favorite with those ignorant of its difficulties. It looks so very easy and rapid *on the map:* 120 miles by rail from Cairo to Suez; 900 miles by steamer, in four days, to Suakim; 250 miles to Berber, which caravans travel in

ten days ; thence 225 miles along the river to Khartoum—altogether 1,500 miles, and twenty-five days would cover the distance.

Yes, if an army could move over the country as easily as a pencil across the map, or even as a party of travellers in time of peace, this would certainly be *the* route. How prone are stay-at-home critics to imagine that at ten thousand miles' distance they can judge of the routes to be followed better than those on the spot. It was just so in this case. The journey is all quick and easy enough, except that two hundred and fifty miles' stretch to Berber, which is an impassable barrier in time of war for an army which cannot move in fractions at several days' interval, but must keep together before the enemy. This route is utterly impracticable for these reasons :

It crosses a rainless desert, not nearly so arid as that of Korosko, but yet affording nothing for the subsistence of men or horses. Though caravans can cross it in ten days, an army with its *matériel* would require twenty-five at least (the British staff said thirty), *if they encountered no opposition.* Where a caravan can find water and grazing for its few camels, an army would perish for want of both. A march of fifteen miles from Suakim would bring the army to the foot of the great Arabian chain which begins at Suez and runs parallel to the Red Sea down to the equator. Many of its peaks rise to eight thousand feet, its passes, or "gaps" being from two to three thousand. *It is eighty miles across,* consisting of several parallel ridges separated by deep valleys. Beyond this chain, a plateau extends one hundred and sixty miles farther to the Nile, very broken and abounding in narrow, steep rocky or sandy passes, where a caravan is

compelled to move in single file. For this entire distance the water supply is barely sufficient for small caravans.

It often happened to me, travelling in the Soudan with only two hundred men and four hundred camels (a larger caravan than the average), to find the wells I depended upon just exhausted by a preceding caravan. I would then have to wait from one to three days for the water to ooze in again sufficiently to enable me to replenish my water-skins, and I would leave the wells exhausted for the next comers.

Now, remembering that General Graham, with four thousand choice troops, came so near being destroyed in the plain, within fifteen miles of Suakim, it is evident that no army could venture to advance through the mountains inhabited by the most warlike Bedouin tribes, and the deserts beyond, with less than six or seven thousand men, requiring for the transportation of water, ammunition, supplies, baggage, and forage for all the animals, not less than eight or ten thousand camels. How could such a force find water enough when the best wells on the route cannot supply over six hundred in twenty-four hours?

"Suppose that the fierce Bedouins, whose homes are in these mountains, have allowed the British, strung out in a long, slender column vulnerable at every point, to cross the numerous defiles where a few hundred men could stop a whole army. Suppose the invaders to have emerged without serious losses from the mountain range out upon the plateau extending to the Nile, and which itself is very rugged and abounding in difficult passes and belts of deep, loose sand,—the toughest obstacles of all. The worst is yet to come. Water was comparatively plentiful in the mountains, and the heat was moderate. But now the only supply is from the scanty wells upon the line of march. The Bedouins retreat, destroying the wells behind them (which is a very easy thing to do), and swarms of them hang around the flank and rear of the invaders to harass them and cut off their stragglers. The heat rises every day above one hundred degrees, even in November and December, and one hundred and fifty degrees and more in summer; in that cloudless land

there is no shade. The plain quivers under the fierce sunlight, while the mirage deludes the eyes with the mockery of fictitious lakes. This is what I experienced day after day on the deserts. Suppose now the invaders to have consumed their supply of water. If the enemy can cut them off from the wells for three days, there is no need of firing another shot. Not a soul of them can survive. It is the story of the Roman legions perishing in the Parthian deserts, and of Hicks-Pasha in Kordofan.

"In the 'Waterless Land' water is the paramount question. If it be asked how a large body of Bedouins, like the ten thousand who nearly destroyed the British squares at Tamaï, manage to subsist, the reason is plain. In the first place, they do not need the enormous trains required for a European army. They are the most abstemious of men. Each man carries a skin of water and a small bag of grain, procured by purchase or barter from caravans. Their camels and goats move with them, supplying them with milk and meat, and subsisting upon the scanty herbage and the foliage of the thorny mimosa growing in secluded wadies. As to water, they know every nook and hollow in the mountains, away from the trails, where a few barrels of water collect in some shaded ravine, and they can scatter, every man for himself, to fill their water-skins. On my first expedition, near the close of the three years' drought, I reached some wells on which I was depending, and found them entirely dry. It was several days to the next wells. But my Bedouin guides knew some natural reservoirs in the hills about six miles away from the trail. So they took the water camels at night-fall, and came back before morning with the water-skins filled. An invading army would find it hard to obtain guides, and even if they did, they must keep together, and could not leave the line of march to look for water. Besides, the Bedouins, accustomed from infancy to regard water as most precious and rare, use it with wonderful economy. Neither men nor animals drink more than once in forty-eight hours. As to washing, they *never* indulge in such wasteful nonsense. When Bedouins came to my camp, water was always offered them. Their answer would frequently be: 'No, thanks; I drank yesterday.' They know too well the importance of keeping up the habit of abstemiousness. No wonder they can subsist where invaders would quickly perish."*

A railroad was proposed as a solution of the difficulty; this only proved the total ignorance of those who suggested it as to the conditions and circumstances of the case. No one denies that a railroad can be built in time of peace across the Arabian chain without much more difficulty than across the Alleghany range (excepting the lack of water and timber), but even then it would be

* Extract from my "Open Letter" to the *Century*, published in the September No., 1884.

a work of a year or two; and Gordon had to be relieved in a few months, or it would be too late, as the sad result proved. It seems to have been imagined that the Suakim desert was a level sand-plain on which there was nothing to do but to lay the rails. Every engineer knows how difficult it would be and how long it would take to construct a railroad over such a range of mountains, through which not even a preliminary survey had ever been made outside of the regular camel trail. Yet two ridiculously abortive attempts were made, as will be seen further.

I have already charged that the failure of Wolseley's relief expedition was due to ignorance of the country in which it was to operate. Here is proof positive that this ignorance was absolutely inexcusable. This Suakim route has been travelled by hundreds of caravans every year from time immemorial, and every well upon it is better known than a corner grog-shop is to all the topers on its block. It had been repeatedly and accurately mapped out years ago. In addition, one of many explorers, my friend and comrade, Col. H. G. Prout, now of New York, a most able engineer, twice promoted for efficient and valuable services in the Soudan, and for a time Vice-Governor-General under Gordon in 1877–79, was sent to join my expedition in Kordofan in 1875. I had gone there by the Nile route some months before; he came by the Suakim route, and he was ordered to make a detailed map, survey, and report of it, especially as to the water supply and the feasibility of constructing a railway. The report (which lies before me now), printed in English, with map and profile, at the staff printing-office, in the citadel of Cairo, contains the most ample information (the map and profile accompany this

paper). It mentions every group of wells on the route, and their capacity. The largest can supply only 600 men and their animals; others vary from 500 down to 250, the average being about 400. I passed over the same route the following year, and can confirm from personal observation the perfect accuracy of Col. Prout's report. This document was perfectly accessible to the British authorities, and a couple of hours' study of it would have convinced any intelligent staff officer that the Suakim route is out of the question for an army. This information conveyed to head-quarters should have put a stop to all the fatal vacillations and delays that followed. Why this neglect of a proper and necessary study of the theatre of war? Was it stolid stupidity, or was it conceit which took it for granted that what was not already known to the British commanders was not worth learning? This blind preference for the Suakim route was the paramount and fatal blunder which caused the final failure of the relief expedition, for its consequence was the loss of four or five months in repeated changes of plan, as follows:

(1) Official announcements published at the time show that when Gordon's pressing appeals for help aroused a popular sentiment demanding his relief (which was before Graham's army had re-embarked from Suakim, April 1st), this officer was expected to open the road from there to Berber; but he was too skilful and judicious to attempt such an impracticable undertaking, and the idea was given up.

(2) At the beginning of May, at the very time that Mr. Gladstone was declaring in the Commons that "the Mahdi was waging a war for freedom and should not be put

down," orders were issued for a survey of the Nile route by Admiral Hay, with a view to ascertain its practicability for gun-boats;—an order ridiculous in itself, for the whole course of the Nile had been described a hundred times before. At the same time a camel-depot was ordered to be established at Assouan (first cataract) for the transportation of the expedition.

(3) On the 11th of June the Suakim route was decided upon, and on the 16th engineers were sent there with the plant for a railroad, and on July 19th iron-clad cars were sent. As late as July 12th this announcement was made public: "The operations for the relief of Khartoum, it has been finally decided, will begin early in September. Gen. Wolseley continues to advise that the line of the chief attack be by way of Suakim and Berber. Additional material for the new railway is being sent to Suakim. The preparations for an expedition up the Nile have been suspended."

(4) Lastly (Aug. 18th), it was announced officially that the Suakim route was abandoned. The railroad material, landed one month before, was shipped off to India, and the Nile route was finally adopted. It was not till after this date that boats were ordered to be constructed in England, Canadian voyageurs enlisted, and transportation and supplies collected. Four changes of programme and four months wasted before the first serious preparations were even commenced! *

But even after all these vacillations, when the Nile route was finally decided upon (near the end of August),

* It will be seen later that three months after Gordon's death and the fall of Khartoum another railroad plant was sent to Suakim, which railroad Graham's second expedition was expected to construct to Berber, and which was also sent back without being even unshipped.

the military authorities proceeded with as much deliberation as if they had had full control of the seasons.

It is an axiom that in war, time is an element of the first importance. How especially so in a country where military operations can be carried on only for a few months of the year! The Nile is as regular as the sun. It begins to rise about the 21st of June, rises steadily until about Sept. 1st, remains at its full until about Oct. 1st, and then decreases regularly until the next June. It does not vary more than five or six days from year to year in centuries, and to ignore these facts, known to the world since Herodotus wrote, 400 years B.C., is unpardonable. Had the Nile route been decided upon in May, boats could have been built or collected and every preparation made for the expedition to leave Cairo July 15th, when the Nile had been for nearly four weeks on the rise. It was perfectly clear navigation to the second cataract which should have been reached by Aug. 15th. Then, with a steadily rising Nile, the passage of the upper cataracts would have been easy. Korti could have been reached fully four months earlier, and full advantage could have been derived from the cool season which is delightful in those regions. The fall of Khartoum and the death of Gordon are the direful consequences of that fatal delay.

Nevertheless, late as it was when the final decision was adopted, no attempt seems to have been made to compensate for the lost time. Wolseley did not reach Egypt until Sept. 9th, and the camel-corps organized in England did not sail from there until Sept. 26th. The whale-boats ordered from England did not leave the second cataract at Wady Halfa until the 19th of Nov., and altogether the fact seemed to be ignored that the Nile was steadily falling,

and that cataracts and shallows which could easily be passed at the right season would become altogether impassable at low Nile.

Yet the military authorities had abundant warnings of the danger of delay, as can be seen by a perusal of the journals of that date. Sir Samuel Baker's letter of April 5, 1884, is so truly prophetic of what followed, that I quote a few passages. The italics are my own.

"In this we see a continuation of that spasmodic policy which has characterized every operation in Egypt since the first shot was fired at the forts of Alexandria. There has been no carefully organized plan, no definite aim, no foundation for the edifice of a future; but a hand-to-mouth series of attempts, each of which has been a direct contradiction of our most solemn declarations.

"For the last two years with regretful accuracy I have expressed my opinion upon the present and future of Egyptian affairs. Dark as the present may be, the coming events will be still darker, unless the policy of Great Britain shall be radically changed. The country is bankrupt; brigandage, which was formerly unknown, is rampant even in the Delta (seventy-four cases within one month); the Soudan is in a blaze of insurrection, and *General Gordon in a most dangerous position*, as by a letter I received from him of *the 11th of March, he doubts the possibility of defending Khartoum beyond a certain period.*

"Will England permit this sacrifice? We have been a grievous curse to Egypt, and we are entirely responsible for the miseries and disasters which have befallen this unhappy country. It may suit the convenience of British officials to pooh-pooh the gravity of the situation which they have themselves provoked, but the facts are patent to all: the crisis has arrived, *and unless immediate preparations shall be made* for the relief of General Gordon at Khartoum, *we shall be again too late, as we were at Tokar and Sinkat.* What will be the humiliation of England should he fall through the apathy or incompetence of the British Government?

"*I do not wish to prophesy evil, but I see it.* Let the British public awaken to the facts of the situation; England is responsible for the misdeeds of her Ministry, and she is the guaranty for the safety of General Gordon, who was started upon an impossible enterprise. As we invaded Abyssinia to release a British consul, we are bound to deliver our envoy at Khartoum should his retreat be intercepted.

"*Not a day should be lost in preparing for this necessity.* The route from Suakim to Berber can only be opened and secured by Indian troops. *The Nile will afford the most secure route from Cairo to Khartoum if immediate preparations shall be made for an expedition at the first rise of the river in July.* I have already suggested to the highest authority this plan of advance, which requires the most careful but energetic management. Still I have no hope that such energy will be exhibited; *the apathy and vacillation which have induced a series of dis-*

asters will stave off the evil hour until one more garrison shall have been overpowered; but should Khartoum fall, and Gordon be thus cruelly abandoned, let the Government beware of the scorn of the British people."

"Apathy and vacillation." The latter, especially, was the fatal cause which paralyzed diplomatic as well as military decisions. I have already mentioned the Ministry's contradictory course regarding the intervention of Turkish troops. Yet in a pecuniary view alone, how much cheaper to have paid a few millions to the Sultan for Turkish regiments! Going there as the soldiers of the Padishah, the chief of Islam, no religious antagonism could have existed between them and the Soudanese. They would have appeared as the representatives of the lawful head of their religion, commissioned to put down a schismatic, false prophet; while, on the contrary, the British represented what is most hateful to a Mussulman, an infidel and a *giaour*. This alternative had been rejected. There was another even more promising, and to this day it is an unexplained mystery why it was abandoned. The great empire of Abyssinia is contiguous to the theatre of war in the Soudan. Its people are Christians of a very rude and barbarous type. They are of the same or a kindred race with the Bedouins of the deserts, and are equally indomitable warriors. They had defeated in 1876 on the plain of Gura an invading Egyptian army of fifteen thousand regular troops, splendidly armed and equipped, which they attacked with the same reckless bravery as that displayed by the Bedouins against the British squares. The Egyptians escaped annihilation only by retreat into a large fort previously constructed by an American officer (Col. S. H. Lockett), from which they repelled several furious assaults. They

were glad enough later to conclude a peace, and be allowed to return to their own country.* The Abyssinians' most ardent desire is to obtain an outlet on the Red Sea, from which they have been entirely shut out by Egypt. Early in April Admiral Hewett went on a mission to King John. It was stated at various times that the latter was willing to furnish thirty thousand or more men for two shillings per head per day, provided he was given the port of Massowah and a strip of territory along the Red Sea. It was the very best arrangement that could have been made, and it was only a question of money, for those people are extremely avaricious. England could have secured King John's co-operation for one fifth the cost of her expeditions, and it would probably have saved Gordon; for the Abyssinians, accustomed to the climate and the country, would have had but a short distance to march from their own territory down the Blue Nile and the Rahat, relieving the garrisons of Kassala and Sennaar, and reaching Khartoum from the southeast without difficulty. Why the arrangement was not concluded is not known. Probably British pride revolted at the idea of Gordon's being rescued by an army of barbarians. The last information on the subject was a dispatch from Admiral Hewett, received on the 12th of June.

"In this the Admiral reported that his mission to King John, of Abyssinia, was completely successful. A treaty was signed securing free transit from the Soudan through Abyssinia to Massowah. Another treaty, suppressing the slave trade, was negotiated. Admiral Hewett telegraphed also that he had reached the coast of the Red Sea, ready to embark on his return."

* A very interesting account of the Abyssinian war with Egypt in 1874–76 is given in "Moslem Egypt and Christian Abyssinia." New York: Atkins & Prout, 1880. By Col. Wm. McE. Dye, formerly U. S. A. (at that time on the general staff of the Egyptian army), who was wounded in the battle of Gura.

It is evident that he had accomplished nothing of any value, in spite of the assertion of complete success.

In the meantime, Gordon had every reason to believe himself abandoned by his own government.

"The Egyptian correspondence shows that the Government refused to allow Indian troops to relieve General Gordon, on the ground that India has no direct interest in the Soudan. Among the dispatches included in the correspondence is one from Earl Granville to Sir Evelyn Baring, suggesting that British troops be dispatched to Wadi-Halfa to support General Gordon. To that dispatch Sir Evelyn Baring replied that the military authorities deprecated the proposed movement on account of the climate. On April 9th, General Gordon telegraphed that three thousand Turkish infantry and one thousand cavalry could accomplish the relief of Khartoum, and crush the Mahdi in four months. Sir Evelyn Baring telegraphed to Earl Granville that it would be impossible to organize a Turkish force in time to be of any use, and that to dispatch troops of the Sultan would involve political difficulties. On April 23, Earl Granville telegraphed to Mr. Egerton as follows:

"'General Gordon should be immediately instructed to keep us informed in regard to any immediate or prospective danger at Khartoum, and that, in order to be prepared for such danger, he should advise us in regard to the force necessary to secure his removal. We do not propose to supply him with a force for the purpose of making military expeditions, such being beyond the scope of his commission and contrary to the pacific policy which was the purpose of his mission.'"

Every pretext seems to have been used to refuse aid. Granville's dispatch is absurd on the very face of it. What good could Gordon accomplish by informing him of any immediate or prospective danger at Khartoum, when it would take four months after the receipt of his telegraphic dispatch before any relief could reach him? And what an abuse of words to speak of "the pacific policy which was the purpose of his mission," when Graham had just been slaughtering thousands of Bedouins on the shores of the Red Sea!

Left to his own resources, Gordon made the best dispositions in his power. The Mahdi having refused his overtures and having attacked him at Khartoum, Gordon sallied out against him on the 16th of March, but was re-

pulsed in a hard fight at Halfiyeh, just outside of Khartoum, by the treachery of two black chiefs whom he had made pashas, and who were summarily tried and shot a few days later. Having exhausted the gold he had brought from Cairo, he issued bills which the merchants accepted upon his personal guaranty, as well as paper and leather money for circulation, and in this way he procured funds for soldiers and supplies. He raised an army by promising freedom to slaves who enlisted in his ranks. He protected that army from the attacks of a superior force by planting torpedoes in front of his lines. He converted his small river steamers into gun-boats by plating them with iron and building turrets on them.* But in spite of all his efforts he was already enmeshed in the fatal net which he was doomed never to break through.

By the end of March the whole country south of Berber was in a state of revolution, and Gordon had almost daily fights with the enemy, and in the latter half of April his head-quarters at the Khartoum palace were assaulted by the rebels' fire from the opposite shore. By the beginning of May the Arabs, crossing the Blue Nile, had established themselves at Buri, a mile from the eastern corner of the entrenchments. At this spot the besiegers suffered terribly from the mines which General Gordon had laid down. As early as the middle of April Gordon had begun to have recourse to this method of disposing of his assailants. On May 7th, nine mines (according to Mr. Power's diary) were exploded during

* They were not over sixty or seventy feet long, and had been brought in sections to Berber on camel-back during Baker's governorship. I travelled down on one of them from above Khartoum to Berber in January, 1876, and was frequently grounded, once, among others, at Shabluka where Sir Charles Wilson came to grief.

an attack, and one hundred and twenty of the Mahdi's men were blown to pieces.

In the meantime Berber was captured and its garrison massacred, as well as a number of its inhabitants, on the 26th of May. So closely was Gordon invested that it was not until the 25th of June that he and his companions had the first news of this additional disaster which isolated them still more from the outer world. Nevertheless they continued their defence with renewed vigor. On July 9th Gordon drove the rebels out of Buri (see plan of Khartoum), killed numbers of them, capturing quantities of rifles and ammunition, and driving the enemy out of thirteen zeribas or stockades, which they had constructed on the river banks. Mr. Power's diary closes at the end of July, up to which date Gordon had lost seven hundred men. He continued the defence so energetically that after three months the siege was raised. Descending the river in four steamers, with troops and cannon, he bombarded and destroyed Berber in September, and drove the rebels from Shendy and all the other positions that they held along the river. But it was impossible for his steamers to navigate beyond Berber. He tried, however, to establish communication with Dongola, and for this purpose he sent his trusty companion, Colonel O. H. Stewart, Vice-Consul Power, with Mr. Herbin the French consul, twelve Greeks and other refugees, in the lightest steamer that he had, hoping that the Nile being at full height they might get over the cataracts. By wonderful good luck they passed through the fifth, but near the fourth cataract the steamer struck on a rock, and sank so suddenly that Colonel Stewart and his party barely escaped to the west bank

without having time to arm themselves. There they were met by some Bedouins of the Monassir tribe, who professed friendly intentions and invited them to take shelter in two native houses, where the whole party were ruthlessly murdered, except a stoker and four sailors. It was learned afterwards that Gordon, hopeless as to his own fate, had sent Stewart away to save him from the destruction that he foresaw. For a time Gordon's steamers enabled him to send foraging parties up and down the river, by which means he secured ample supplies for the garrison and the people. There is but little doubt that if he had thought only of his own safety he might at that time have escaped with a small body of picked men, by steaming up the river to the equator and taking his chances of making his way across to Zanzibar. But all his steamers together could not transport over eight hundred men, and his departure would leave Khartoum and all its helpless inhabitants to the same fate that had befallen the people of Berber. It is needless to say that Gordon would have died a hundred times sooner than seek his own safety by abandoning his post and the people who trusted him.

From that time the cords drew closer and tighter about him. The enemy planted along the river the Krupp guns they had captured from Hicks and at El Obeïd, and seriously impeded the movements of the steamers. But Gordon's energy never relaxed, and what is most wonderful, though a great part of the population was disaffected, and many of his soldiers deserted him, yet so great was the power of his character that the rest remained faithful to him to the last moment. How many times in those weary days must he have gazed with anxious eyes down

the Nile, watching in vain for the approach of the relief which never came until it was too late!

While he was thus continuing his heroic struggle, let us see what was being done for his rescue.

We have already seen that it was not until the 18th of August that the Suakim route was finally abandoned, and the Nile route adopted, but there was still time to achieve success, if an energetic effort had been made to redeem the precious time already lost. Unfortunately more time yet was wasted in useless delays. General Wolseley, the hero of the holiday campaign of Tel-el-Kebir, in high favor in court circles, and proclaimed (very erroneously) by his admirers as England's *only* general, was just then receiving an ovation in London, and he was called in to advise the Ministry. Having gained his first laurels by the use of whale-boats and Canadian voyageurs in the Red-River expedition in 1870, he insisted that the same means were absolutely necessary on the Nile. A dispatch, dated "War Office, August 8, 1884," was addressed to Lieutant-General Stephenson, by the Marquis of Hartington, detailing the plan adopted for the expedition up the Nile for the relief of Gordon, which plan was evidently drawn up by Lord Wolseley. It proposed the use of small boats for transportation beyond the second cataract, "such as were employed in the Red-River expedition."

To this Lieutenant-General Stephenson replied by telegraph: "Small boats proposed not suitable. Can procure large amount water transport locally."

Being a practical soldier, and gifted with the common-sense and ability to make use of the means that he found at hand, he saw the folly of wasting invaluable time

waiting for boats to be built in England, while plenty better suited for the purpose could be had on the spot. But his curt condemnation of Lord Wolseley's pet idea, no doubt, cost the lieutenant-general the command of the Nile expedition, and unfortunately caused the appointment of the originator of the plan; for on August 26th, he received from the War Office the following telegram:

"After anxious consideration, her Majesty's Government have come to the conclusion that it is unjust to you to ask you to be responsible for directing an operation which, after full knowledge of plan, you consider to be impracticable. They have, therefore, decided to send Lord Wolseley to take temporarily the chief command in Egypt. Government highly appreciate the manner in which you have carried out the important and difficult duties of your command, and earnestly hope that you may feel yourself able to remain in Egypt whilst Lord Wolseley is there, and assist him with your advice."

Lieutenant-General Stephenson promptly replied: "Will willingly remain here as you wish." Thus it followed that three months more were lost while the boats were being built and the voyageurs were being enlisted in Canada, so that it was the 19th of November before the first division of the expeditionary force was ready to start from Wady Halfa, in eight hundred whale-boats. Judging from the illustrations in the *London Graphic*, from drawings made on the spot, it must have been a very brilliant spectacle, the white-painted whale-boats, in double file, each covered with an awning, towed by steamers, the soldiers sitting comfortably smoking their pipes with all the ease of pleasure tourists. It seemed like a parade or a review, and must have looked very picturesque—*mais ce n'était pas la guerre.* No doubt the expedition appeared much more symmetrical, much more pleasing to a martinet's eye than if it had been transported in the common rough country boats. I am

not able to state what was the expense in money of this extra-smartness of appearance, but I know this: its ultimate cost was Gordon's life, and the success of the relief expedition. How could Wolseley fail to understand that no superiority of English boats and Canadian voyageurs (which was by no means proved by the performance) could compensate for the delay it involved? When it is remembered that the advance of the relieving force reached Khartoum only three days after Gordon's death, can there be any doubt that the catastrophe would have been averted by the saving of two or three weeks, not to say months, of the time so unnecessarily wasted?

And yet Gordon's situation must have been perfectly well known to General Wolseley. In a letter dated Sept. 9th Gordon said: "We have sufficient money and provisions to last four months. At the end of that time we shall be much embarrassed."

Another letter, published in the official "Egyptian Blue-Book," addressed to General Lord Wolseley, dated November 4th, says:

"I have five steamers and nine guns at Metemneh awaiting your orders. I can hold out forty days longer with ease. After that it will be difficult. The loss of Colonel Stewart is terrible. I told him to give you all the information possible. He had my journal from January 3 to September 10. The Mahdi is eight miles from Khartoum Sennaar is all right. My journal from September 10 to date is on board one of the steamers which you will find at Metemneh. I continue to have occasional fights with the Arabs. It is rumored that all the Europeans with the Mahdi, including Slatin Bey and the nuns, have become Mussulmans. Lupton Bey has surrendered. I have sent out scores of messengers in all directions during the last eight months. Do not send private letters to me, the risk is too great. Do not write to me in cipher. I have none and it is of no use. The Mahdi knows every thing. Take the road from Ambukol to Metemneh. You need not fear the Mahdi. Both the Greek consul and the Austrian consul are safe. The Mahdi has captured a letter from the king of Abyssinia to me. Your expedition, as I understand, is for the relief of the garrison of Khartoum, which I failed to accomplish. I decline to admit that it is for the rescue of me personally."

It was evident from this that Gordon considered it impossible to hold out beyond Jan. 1st at the latest, and that Wolseley was aware of it. But even after the start was made, Wolseley's advance was unaccountably slow, for he took forty days to reach Korti, 400 miles, with only 6,000 men, while 4,000 more were still below Dongola. If his excuse was the difficulties of navigation, they could have been avoided by starting when the river was high. He was now (Dec. 16th) at the great bend of the Nile, where it changes its course from south-west to north, 160 miles from Abou-Hamed and about the same from Metemneh. He was at last within striking distance of the enemy and might expect an attack at any moment. Strategy dictated concentration, instead of which he sent off General Herbert Stewart, on the 30th, across the Bahiuda desert to Gakdul wells, 97 miles off, with 1,150 men and 2,000 camels. Leaving the troops there, Stewart returned to Korti and went back on the 8th of January with 1,500 more men and as many camels. By this time more troops having reached Korti, Wolseley, without waiting to see the result of Stewart's movement, sent away General Earle up the Nile towards Abou-Hamed, at right angle with Stewart's direction, with 2,500 men, while he remained at Korti with an equal number, entirely beyond supporting distance of those two detachments which were now several days' march from him.

Meanwhile Stewart left a small force to hold Gakdul wells—which, by the way, are not wells at all, but natural rock reservoirs of rain-water, much preferable to wells as long as their water holds out. Thence he advanced towards another reservoir at Abu-Klea, twenty-

three miles from the Nile, but he found the enemy barring the way, about three thousand strong, in two divisions. On Saturday, Jan. 17th, Stewart, leaving his baggage in a zeriba, moved his force of fifteen hundred men in square formation, with artillery at the angles. The British passed around the flank of the enemy who then wheeled and charged furiously upon the front of the square. Recoiling from the terrible fire which met them there, they turned and attacked the rear of the square, where a cavalry and a camel regiment (dismounted) were stationed. This side of the square was broken, "owing, it is said, to the unruly conduct of the camels, which got powder-burned and became unmanageable." The British maintained a hand-to-hand conflict with admirable steadiness, while the other parts of the square and the enfilading fire of the artillery did terrible execution. It was while rallying and reforming the broken square that the gallant Colonel Burnaby, the hero of twenty battles and of the "Ride to Khiva," was killed. He had cut down one Bedouin and was parrying the sword-thrusts of another, when a third rushed past him, turned around, and pierced him in the neck with his spear. The enemy were finally driven back, leaving eight hundred slain around the square.

By five o'clock the Hussars had possession of the wells, where the troops remained to rest and procure water until four o'clock of the afternoon of the 18th. With the purpose of striking the Nile above Metemneh, General Stewart turned slightly to the right after passing the wells of Shebacat.

"Nothing was seen of the enemy until sunrise on the 19th, when the troops arrived at a point some five miles distant from the Nile. The Soudanese were then

seen to be in great force between our troops and the Nile, and mainly gathered about some intervening ridges. General Stewart, however, as the troops had been marching all night, determined that the men should not fight upon empty stomachs, and called a halt.

"The troops were promptly dismounted, and the first care of the General was to form a zeriba. The camels were unloaded and a fortification was thrown up, composed principally of the saddles and baggage. The hospital was placed in the centre, protected by Gardner and Gatling guns. All the while the men were constructing the zeriba, a hot fire was kept up by the enemy's sharpshooters, who were concealed behind bushes and high grass on all sides.

"Their fire was, on the whole, well directed, and had most disastrous effect, General Stewart himself being severely wounded in the thigh. Altogether twelve were killed and forty wounded here. Mr. Cameron, the correspondent of the *Standard*, and Mr. St. Leger Herbert, representing the *Morning Post*, were also shot dead. Mr. Burleigh, of the *Daily Telegraph*, was slightly wounded. The command now devolved by seniority upon Sir Charles Wilson.

"When the zeriba was nearly completed, the force was formed into a square and the advance was sounded at 2 P.M. The front of the square was composed of the Naval Brigade and Grenadiers, the right flank of the Coldstreams, Scots Guards, and part of the Heavy Corps, and the left flank of the Mounted Infantry, while the Sussex Regiment and the remainder of the Heavy Corps brought up the rear.

"After the British force had advanced for about two miles, the enemy also began to move forward in two large bodies in echelon. They first directed their attack on our right front, toward which they charged, but our men stood perfectly steady and delivered a terrific fire into their midst, mowing them down in heaps. So telling was each volley that none of the attacking force could get within sixty yards of our front line, though they made three desperate charges. Our loss here was six killed and twenty-three wounded. The guns were worked admirably by Captain Norton of the Royal Artillery, and did immense execution.

"While one body of the enemy was thus fruitlessly attacking the square, another body, mostly on horseback, made for the zeriba. The force garrisoning it was made up of detachments of every corps, under the command of Lord Charles Beresford, R.N. The attack on the zeriba was sustained for two hours, when the enemy were compelled to retreat before the fierce fire kept up by the garrison from guns and rifles alike. One man was killed and three wounded while they were helping to erect a small redoubt some fifty yards to the right of the zeriba. This small work, when finished, was held by Lord Cochrane and forty of the Life Guards and Scot Greys, who by their steady fire did much to repel the constant rushes of the enemy.

"The loss of the rebels during the whole day must have been quite 2,000, reckoning both killed and wounded. Among the enemy's forces were many slaves, several of whom gave themselves up to the British. They say the Mahdi sent them from Khartoum.

"At sunset the square reached the Nile, and then encamped for the night. Early next morning the square marched back to the zeriba, and in the evening the

whole force returned to the river, where strong intrenchments were thrown up. The total British loss, including the loss at Abu-Klea, was one hundred and four killed and two hundred and sixteen wounded.

"On Tuesday we moved forward through the villages surrounding Metemneh, and on Wednesday morning a reconnoissance in force was made of the place itself. It proved to be tolerably well fortified. Some shots were fired from the Gardner and Gatling guns, and the enemy answered occasionally with one gun or with rifle-shots fired through loopholes in the walls. Very little was, however, seen of the defenders, who appeared very unwilling to show themselves. A pleasant surprise, however, was in store for the men, as four of Gordon's steamers arrived on the 21st, which at once landed five hundred men and five guns as reinforcements."

They had left Khartoum about one month before, and reported that Gordon had been fighting hard for two weeks before they left. No doubt he had sent them forward to hasten up the relief which he was looking for. An evidence of his belief in the hopelessness of his situation is the fact that he sent his diaries and other important papers by these steamers, in order that they at least might be preserved, and in an accompanying letter he said that he knew he was being betrayed, but that he was powerless to prevent it.

On the 22d and 23d, Sir Charles Wilson, on Gordon's steamers, bombarded Shendy for two hours with six guns, destroying the town almost completely. Several villages around Metemneh were also burned to the ground, but as it turned out it was a fatal loss of time, for had Sir Charles Wilson started on the 21st as soon as the steamers reached him, he might have arrived in time. It was not until the 24th that he left for Khartoum on two steamers with part of the Sussex regiment, Colonel Boscawen being left in command of the entrenchment at Gubat with about nine hundred men. Lord Wolseley, before hearing of Stewart's victory, had on Monday, the 26th, despatched a strong convoy to Gakdul, followed on

Wednesday, the 28th, by the Royal Irish and the West Kent regiments.

When Sir Charles Wilson started for Khartoum from Metemneh, his expedition was not supposed to be hazardous. The report that Omdurman had been captured by the Mahdi on the 13th rendered it probable that the steamers might have to run the gauntlet of a few shots when they arrived at the junction of the Blue and White Niles; but this was not regarded as a formidable danger. The vessels continued on their way unmolested, and they reached Halfiyeh on the 28th.

"Here the banks of the river were lined with rebels, who opened fire with four Krupp guns at the steamer. No material damage seems to have been done, owing, no doubt, to the fact that General Gordon had all the steamers protected as far as possible with plates of iron and other means of keeping out missiles. They discovered that the report that Omdurman had fallen int› the hands of the enemy was only too true, and from that position also the enemy opened fire. Things began to look worse when the enemy was found to be in possession of the island of Tuti, which lies at the junction of the two Niles, just outside the city of Khartoum (see plan of Khartoum). Still pressing on under a storm of bullets, they came within hail of Khartoum. To their dismay they found that instead of being welcomed as deliverers, the garrison of the capital took up the fire from which they had been suffering and received them as foes. No flags were flying from the public buildings in the town, which appeared to be in undisputed possession of the enemy. The palace, a well-known building, visible from the river, was to all appearance gutted. Finding it impossible to effect a landing in face of the overwhelming forces of the enemy, they were compelled to retreat out of range, and then endeavor to obtain what information they could by communication with the shore as to the fate which had befallen General Gordon. All reports agreed in asserting that Khartoum was in the hands of the Mahdi, and that the city passed into his possession by treachery."

Five natives present at the time declared that the officers commanding the three steamers left at Khartoum took the Mahdi's troops to the main gate of the city, where they entered under cover of the night.

It was ascertained later, with a considerable degree of probability, that for several days previous Farragh-Pasha

(a Soudanese promoted by Gordon) had been receiving from the Mahdi proposals for a capitulation; that he had repeatedly pressed Gordon to accept the terms offered, which the latter angrily refused to do; that on the afternoon preceding the capture, Farragh had again urged a surrender, probably showing an insubordinate spirit, and that Gordon, yielding to one of those impulses of ungovernable wrath which were a trait of his character, struck Farragh and drove him from his presence. That night (26th), Farragh being in charge of the ramparts, admitted the enemy within the gates. He soon reaped the just reward of his treason. A few days after the capture he was put to the torture to make him reveal the hiding-place of supposed treasures, after which he was hanged on the public square at Omdurman.

For a few days some doubts were entertained as to Gordon's fate. The most reliable reports assert that the Mahdi had 60,000 men in the vicinity of Khartoum, and that he introduced a number of his emissaries into the city. Those emissaries mingled freely with the native troops under General Gordon, and by bribes, threats, and appeals to their religious feelings induced them to mutiny. Seven thousand of the garrison deserted to the rebels, leaving General Gordon only 2,500 faithful soldiers. A dispatch of Feb. 17th gives the following account of his death, afterwards confirmed by others:

"A cavass of Ibrahim Bey Ruchdi, who accompanied General Gordon from Cairo, has come in from Khartoum. He states that on the morning of the 26th of January he heard a disturbance, and came out with his master to see what was the matter. They met General Gordon, with about 20 cavasses and some notables, coming out of the inner gate. When the party arrived at an open space before the house the rebels met them and fired, killing General Gordon, his secretary, and some others, and the survivors fled. A few soldiers turned out and fired

at one of the gates, but there was scarcely any fighting, and Khartoum was practically taken without firing a shot."

This was followed by a second dispatch:

"KORTI, Feb. 17th, Midnight.

"A messenger attached to the Intelligence Department has come in six days from Nasri, a place about one day's journey from Khartoum. He corroborates the news of the fall of Khartoum and the death of General Gordon. The regular soldiers were marched out of Khartoum into the Njunnit camp, some of them being killed by the Mahdi's troops, who fired on them as they left the town. All the Turkish—*i. e.*, Egyptian soldiers were killed by the rebels, who, however, did not kill the women and children. The men holding Tuti Island also fled. The Austrian consul was killed in his own house, while M. Nicola, the Greek consul, and a doctor were taken alive."

It is believed that about 4,000 of the Greek, Levantine, and Egyptian residents were slaughtered, but the horrors of the massacre that occurred that night will never be fully known.

Such was the tragic fate of one of the most chivalrous and noble-hearted soldiers that ever shed lustre not only upon his own country, but upon the human race.

Khartoum fell on the 26th of Jan., and Sir Charles Wilson arrived in sight of the captured city on the morning of the 28th. Before giving up the attempt to reach it, his steamers sustained for four hours the fire of thousands of riflemen, eight Krupps, and several machine-guns. One man was killed and five were wounded on board the vessels. There was no alternative but to return to Gubat. On the 29th one of the steamers was wrecked and had to be abandoned. On the 31st, according to the report of Lieut. Stuart-Wortley (R. N.), the other steamer, on which were Sir Charles Wilson and his party, was wrecked about four miles above the enemy's position, just below the Shabluka cataract. The steamer, while dropping down stern foremost nearly clear of the cataract, struck hard, and the rock made a large hole

in the bow. She sank to the level of the deck. Sir Charles bivouacked on an island with his party, to which were added some 250 fugitives from Khartoum, whom he picked up along the Nile. His intention was to remain there until relieved. Lieut. Stuart-Wortley, with four Englishmen and eight natives, left at dusk in a row-boat and floated safely by the enemy's works through a few volleys of musketry. They arrived at Gubat at 3 o'clock on the morning of the 1st. Immediately on receiving the news, Lord Charles Beresford, R. N., commanding the Naval Brigade, with the Sofia, one of the steamers left at Gubat, manned by British seamen of the Naval Brigade, started up the river to relieve Sir Charles Wilson and his companions. The steamer moved up slowly against the stream, and was not able to get up there before Tuesday (3d). It was fired at incessantly by the enemy's riflemen, who were estimated to be 4,000 strong, and a battery of three Krupp guns, at a point about forty miles above Metemneh. The steamer was almost past the position when a round shot went through the boiler, but the vessel went on some 200 yards with the remaining steam, thus getting away 500 yards from the enemy, whose two guns were in embrasures pointing down the stream. The steamer then anchored, and the Gardner and the heavy guns were shifted so as to fire straight to the front. The enemy were then unable to show above the parapet, and dared not move their gun to the only embrasure pointing up stream, but fired wildly from the others. Only the guns' muzzles were visible, and the detachments in charge were unable to point their pieces towards the steamer, because they must have exposed themselves. The enemy had neglected to

provide a covered way for getting out of their rifle-pits, and when any one attempted to leave them, the Gardner and the marksmen speedily accounted for him. Lord Beresford then anchored, and Chief Engineer Henry Bembow, R. N., repaired the boiler under fire. Fortunately the missiles mostly went over the vessel, the range being only 500 yards. Sir C. Wilson, seeing a dense cloud of steam rise, thought that the boiler had burst. He landed his party, guns, etc., on the right bank, and marched down towards the spot, aiding Lord C. Beresford by his fire. Tuesday afternoon and night were spent in the difficult work of effecting repairs. Sir C. Wilson halted for the night a few miles lower down; next morning Lord C. Beresford picked the party up, taking them on to Gubat.

"The enemy had considered the capture of the steamer a certainty, and when they saw in the morning that she was getting up steam and in sound condition, they were in consternation. The steamer went a couple of hundred yards up stream so as to turn round out of range, and then came down at a speed of nine knots. Mr. Keppel put a shell into the centre of an embrasure. The enemy seemed afraid to show themselves above their defences, and they must have lost heavily by the steamer's fire The whole party at length got away on the morning of the 4th. The steamer's loss amounted to one seaman killed, seven men wounded, and Lieutenant Van Koughnet, R. N., wounded. Several men were scalded by the outburst of steam. Sir Charles Wilson's loss was two men killed, and twenty wounded—all Egyptians,—and four men of the Sussex Regiment slightly injured."

Gen. Wilson arrived at Gubat Feb. 6th, and left the same day for Korti.

The revulsion of feeling when the news of Gordon's death reached London was beyond description. The *London Times* of Jan. 30th (weekly edition), after publishing the accounts of Stewart's victory, said in its editorial column:

"It is a new evidence of Gordon's untiring energy and inexhaustible resource that as soon as the relieving expedition touches the Nile, he is ready to offer substantial

assistance. His steamers will now exercise a potent effect upon the fortunes of the campaign, since they not only increase enormously the striking power of the little force encamped at Gubat, but will also enable a helping hand to be held out to General Earle as soon as he reaches the navigable portion of the river. In fact, thanks to them and the heroic exertions of Sir Herbert Stewart, Lord Wolseley now has hold of Khartoum itself, and the military object of the expedition is practically attained. The moral effect of these victories, and of the commanding position they secure, cannot but be enormous, and any further resistance that may be offered by the Mahdi must be of a comparatively broken and ineffectual kind. It now remains to make a wise use of the magnificent results attained by the courage of our troops, and to see that policy shall in some degree rise to the level attained by our arms. Some permanent arrangement must be made for the maintenance of the advantages so dearly bought, and for the enduring settlement of a district consecrated by the blood of brave men, and rendered forever memorable by the extraordinary achievements of General Gordon."

Two days later this very natural exultation was changed into mourning and indignation. A few extracts from the London press will show better than any words of mine the state of public sentiment at the time.

The *Times*, in its editorial discussion of the last news from Egypt, says:

"No words of ours are adequate to express the mingled feelings of dismay, consternation, and indignant disgust which have been universally evoked by this news. The present situation is the lamentable result of a long course of disregard of the elementary maxims of statesmanship. The country is obliged to confess that every thing has been done that could be done to add to the risks of defeat. Advice has been spurned, time wasted, and opportunity lost. The splendid valor of our soldiers, which offered the last chance for retrieving the mistakes of policy, was handicapped by the choice of a line of march which was at the same time long and difficult and without means of communication and without a base of supplies. By the loss of Khartoum, which was his objective point, Lord Wolseley's whole expedition is in the air. Concentration of his forces is the first necessity which confronts Lord Wolseley. But where shall he concentrate? The only effective base is Suakim, and to make this available, Osman Digma must be vanquished, and the road to Berber opened. General Gordon must be saved or avenged. The honor of the country must be vindicated at whatever cost."

In another place the *Times* says:

"The fall of that solitary figure (Gordon), holding aloft the flag of England in the face of hordes of the sons of Islam, will reverberate through every bazaar of Cairo and Calcutta. The result will be a long and deliberate abandonment of respect for the British Government and its officials by the followers of Islam. But England

will save General Gordon, if alive, and if slain, will avenge his death. Woe to his murderers, if he has been killed!"

The *Standard* says in its leading article:

"Let none forget General Gordon's last act of heroism. Though knowing that he had traitors in his camp, he stood by the town and people committed to his charge, and sent his only means of escape to help the British expedition on its way to his relief. He has won undying fame for his country if only by this act. The grievous blow which England has suffered must be met with calm reason, and not with panic passion. All party spirit must be dropped, and a resolution taken by the whole country that the path of precedence and honor points to a recapture of Khartoum. If we shirk this duty, the lives of thousands of British soldiers will have to be risked hereafter in trying to retrieve the blunder."

The *Morning Post* says:

"The mouse-trap policy of the Mahdi appears to have had terrible success. It seems that the Mahdi's calculation was to lure the British army into a perilous position. The pressing question of the moment is, 'Can Lord Wolseley rescue General Stewart's column?'"

On the 6th of Feb., the *Times* said:

"The news of the fall of Khartoum is the worst that has reached this country for many years, and the gravity of the situation so abruptly revealed can neither be concealed nor palliated. Thought serves only to bring home the full meaning of the announcement. It matters little whether the event took place two days or two months before the arrival of Sir C. Wilson; the goal of the expedition is in the full possession of the enemy: the present operations are at an end. At last the thin ice over which the country has been led for so many weeks has broken up, and we are face to face with dangers which it is useless to attempt to hide. That the mere announcement of the fall of Khartoum should have brought such a complete change over the whole military situation is a sufficient proof of the complete unsoundness of our military policy,—a policy depending on chance for its fulfilment, inadequate and contrary to the great principles of military science, unable to bear the stress of the smallest failure. The expedition has toiled for months up the Nile; it has made a long desert journey; it has suffered and fought. But the present emergency finds it still not in possession of Berber, the most important strategic point of all, and the one which, as was pointed out long ago, should have been the first objective. If we were now at Berber, instead of at Gubat, the outlook would be altogether different.* Berber could be reached in six weeks by fresh troops.† How are we to get to Gubat, to Debbeh, or some point in rear? There is surely nothing to be gained by minimizing the gravity

* Not at all unless the road to Suakim were open.

† Where from and how? Still clinging to the delusion of the Suakim-Berber route.

of the situation; the wisest course will be to accept frankly the possibilities with which we are confronted, and to face the danger at once. At Abu Klea there is a force perhaps two hundred and fifty strong, with many wounded. At Gubat there are about nine hundred men, with more wounded. Abu Klea and Gubat have been made strong enough to withstand any direct attack at present, but neither the provisions nor the ammunition supply can be very large. There are the camels, it is true, and there is an ample supply of water. Metemneh is still held by at least two thousand Arabs, whom we cannot now afford to dislodge, and whose proximity constitutes a source of danger under certain circumstances. Two steamers remain at Metemneh apparently, and have doubtless been secured; but their crews may be treacherous, since the stranding of Sir C. Wilson's steamers may not have been accidental. One infantry regiment is approaching Abu Klea, marching slowly and in detachments across the desert. Another was intended to follow. The wells are held by a force little exceeding a battalion. General Earle is somewhere near Birteh with four regiments. The dispersion of force which has thus been arrived at is extreme, and two courses only present themselves to Lord Wolseley. He may retire his whole force on both lines of advance, and concentrate at Debbeh, the strategical importance of which point, in view of a possible advance of the Arabs, has been previously noticed. No position higher up the Nile would be equally secure. Or he may reinforce Gubat, and pressing General Earle's column forward, make the attempt to seize Berber at any sacrifice. The river navigation before the flotilla is, however, very difficult, and weeks must elapse before General Earle can count on reaching Berber; while, with only two steamers available, to make the attempt from Gubat appears barely possible. We may expect, therefore, that Lord Wolseley will fall back, if it is yet possible to do so, and measures must be taken without a moment's delay to open the Suakim-Berber route at any sacrifice. The option no longer exists; the step must be taken if the military situation in the Soudan is to be saved. Berber must be taken whatever it may cost. There is no alternative policy of retirement; the honor of the country must be maintained, even if forty thousand men are required. We have been brought face to face with a grave emergency, and we must meet it like men."

This language was a reflex of the popular feeling, and indicated a natural, although unreasonable, desire for vengeance. The government announced that General Wolseley would be ordered to capture Berber and Khartoum at any cost, and to inflict the direst punishment upon the rebels. Punishment for what, if those people were justifiable in fighting for their freedom? Gordon had fallen by a surprise in a night attack, but this was a perfectly legitimate incident of war. The government's

subsequent course made it doubtful whether these menaces were any more than a stratagem to gain the time necessary to calm popular excitement.

The most important, in fact the vital, question just now was whether General Wolseley's forces could be brought back safely from their exceedingly perilous position.

We have already seen that General Wolseley, having arrived within striking distance of an enemy who, one year before, had proved his ability to put 100,000 men in the field, had sent General Herbert Stewart with 2,500 men across the Bahiuda desert, 160 miles, to Gubat; and at the same time, General Earle, with 2,500 men up the Nile, at right angle to Stewart's course. Looking at the map, it will be seen Earle had to follow the river 160 miles to Abou-Hamed, where it makes another sharp elbow, and resumes its north and south direction. From Abou-Hamed to Berber is 133 miles, making up to that point 293 miles of the most difficult navigation, this being by far the worst section of the Nile. From Berber, where it again becomes navigable, to Gubat, is 150 miles. So that Earle would have had to travel 443 miles before he could hope to make his junction with Stewart. The latter had taken with him nearly all the available camel transportation. Earle took the greater part of the water and transportation and could not possibly leave the proximity of the river, while Wolseley at Korti, with 2,500 men, had no transportation of any kind sufficient to move to the support of either Stewart or Earle. Wolseley's army was thus divided into three fractions of 2,500 men, at the three angles of an equilateral triangle of 150- or 160- mile sides—utterly beyond tactical supporting distance of each other, and this in a

country where the enemy would certainly attack the two moving columns separately, and where no supplies could be found, except what the troops carried with them. A more absolute disregard of strategy cannot be conceived.

When Wolseley sent General Herbert Stewart across the desert to Metemneh, it must have been with the expectation of opening communication with Gordon. The steamers would then have transported Stewart's force to Khartoum, and it is to be supposed that Wolseley, leaving a reserve at Korti and strongly occupying the desert route by establishing fortified posts at the wells of Hambok, Abu-Halfa, Gakdul, and Abu-Klea, would himself have moved on to Khartoum. Having then command of the river, he could have sent a force by steamers to occupy Berber within three days after reaching Khartoum. This shows still more manifestly the absurdity of his sending Earle to Berber by the river some three hundred miles, which it would take him over thirty days to travel. The reason alleged by Wolseley was to cover his flank from a possible attack from Berber, but he would have been infinitely safer from a flank or any other movement, if he had kept Earle with him. Now, however, all his calculations were at fault. Khartoum, which he had expected to occupy as his new base, had fallen; Stewart's column was *en l'air*, and if Earle had reached Berber, he would have been isolated there, and in greater danger than before. The first step imperatively demanded was the concentration of the force so rashly scattered. The moment Wolseley was certain of the fall of Khartoum, he should have recalled Earle's column. We will see that it was not until Feb. 14th that Sir

Redvers Buller fell back to Abu-Klea, and the 25th when Earle's column was ordered to concentrate upon Korti.

"In the meantime advices from Gubat, dated February 1st, gave gloomy statements about the condition of General Stewart's little army there. The men had been placed on three-quarter rations These, however, had been once supplemented with a dole of beans and some fresh meat.

"On the 7th, dispatches from Korti indicated a very serious state of affairs at the British position near Metemneh. Lord Wolseley telegraphed to the War Office that a courier who had just arrived from Gubat reported Colonel Boscawen, the commander at that place, seriously ill, and that the Mahdi's forces were preparing to attack the British camp. The Arabs had several heavy guns, which were being gradually moved up so as to bear on the British camp, and other field-pieces were being manœuvred for the same purpose.

"The main earthworks erected for the protection of the camp from the river front had been greatly strengthened, and it was calculated that they would be completed that night.

"The remainder of the royal artillery, with ten guns, including one Gardner, had arrived. A convoy had been sent back to Gakdul wells for more stores, and had taken forty of the wounded along.

"The force at Gubat on the 9th consisted of twenty-six hundred men, of whom twenty-three hundred were effective, and several guns. But intelligence was received that the Mahdi's forces were advancing from Khartoum to attack the camp with overwhelming numbers.

"By this time Sir Redvers Buller, having arrived at Gubat and taken the command, decided to evacuate the riverside fort and retire to Abu Klea, which he considered a better strategical position. Lord Charles Beresford, who had been patrolling the river with his two steamers, so as to prevent, as far as possible, the enemy from erecting fortifications and securing supplies, abandoned the steamers, rendering them useless to the Mahdi by removing the essential portions of the machinery. (All of them were now destroyed except the three captured by the Mahdi at Khartoum, and the command of the river was now in his hands). On the 14th of February the whole of the troops marched out, halted for the night in the desert, and reached Abu Klea the following day. This retreat was probably due to a skirmish on the 13th inst., from which it was evident that the Mahdi was sending powerful reinforcements to Metemneh. A convoy of wounded had left for Gakdul under Colonel Talbot, and, when about eight miles on the road, was attacked by a large force of the enemy—part coming from Metemneh and part from Khartoum. A sharp little skirmish ensued, but on the appearance of a detachment of light camelry coming from Abu Klea, the enemy disappeared. The convoy met with no further opposition, and reached Gakdul on Tuesday the 17th."

The gallant Herbert Stewart had died of his wound the day before, and was buried at Gakdul wells. A few

days later Sir Redvers Buller retreated to Korti, his troops suffering greatly from hunger, heat, and thirst, and severely harassed by the enemy. So difficult was his retreat, that the English press termed it a miraculous escape.

Let us now look at the operations of Earle's column. This general had left Korti on the 5th of January on his ex-centric movement towards Abou-Hamed. His progress was very slow, his boats finding great difficulty in passing over the shallows and rapids. He occupied nearly fifteen days in reaching Homdab at the fourth cataract, about ninety miles above Korti. The toils and obstacles he had to contend with show how utterly impossible it would have been for Wolseley to give him any support in case of need. While at the fourth cataract, he had a practical demonstration of the folly of wasting the season of high Nile, for the hapless Col. Stewart's steamer wrecked there last September, by striking a rock two feet below the surface, was now to be seen high and dry sixteen feet above water. It was not until the 24th of January that he left Homdab. I quote Wolseley's dispatch of that date, which shows how greatly he underrated the enemy's tenacity of resistance.

"General Earle's column, thoroughly provisioned and equipped, comprising artillery, cavalry, and camel corps, started to-day from Homdab for Berber. The march is to be made by way of Abou-Hamed. The enemy, which includes the entire fighting force of the Monassir tribe, under the command of Wadgamr, who ordered the murder of Colonel Stewart, and the fighting men of other tribes under Moussa, are assembled in war order at Birti. This is forty miles above Homdab, the starting-point of to-day's expedition.

"General Wolseley says that both Wadgamr and Moussa boast that they are determined to give battle. If so, an engagement between these chiefs and General Earle by Monday would seem inevitable. General Wolseley states, however, that the soldiers who go with General Earle are all in the best of health and spirits. They regard General Stewart's battle of last Saturday as a glorious vic-

tory, are proud of the achievements of their comrades, and are anxious to meet the rebels on their own account. General Wolseley declares that the Arabs have been depressed by the news of Stewart's victory, and that its effect has been so great and widespread that, in his opinion, it may properly be considered doubtful if General Earle meets with any serious opposition before reaching Berber."

Why so much delay occurred is not fully explained. It was only on the tenth day after leaving Homdab that Earle had accomplished the forty miles separating him from Birti. Several days were spent in reconnoitring.

"The enemy were found to be entrenched for a distance of half a mile at Birti, parallel to the river, so as to be able to fire on the boats. Their numbers were estimated at from two to three thousand, though the natives report that there are many more. The rapids are consequently to be passed in the following manner: On its arrival at the foot of the rapids, one battalion will disembark, march to the top of the bank, and establish itself there, so as to protect the passage of boats. The next battalion, having brought its boats safely up, will protect the passage of the first, and so on.

"General Earle's cavalry, while reconnoitring, has found the enemy entrenched in a position flanking the river and across the road. Colonel Butler thereupon fell back. The South Staffordshire Regiment is on the island of Dalka, waiting for the Black Watch (Royal Highlanders). On Thursday, February 7th, the camel corps had a skirmish inland with some hostile Arabs, who were driven from the wells where the engagement occurred with a loss of sixty killed and six taken prisoners. The British troops captured a number of rifles, camels, and cattle."

Finally, on the 10th, an engagement occurred, which ordinarily would be considered little more than a skirmish, but which was called the Battle of Birti or Kirbekan, and is thus related by General Brackenbury, who took command after Earle's death.

"CAMP OPPOSITE DALKA ISLAND, Feb. 10th.—Having found the enemy in position stated in telegram of 9th inst., General Earle concentrated Staffords and Black Watch here yesterday, reconnoitred the position, and this morning advanced to attack it. Enemy held a high ridge of razor-backed hills, and some advanced koppies in front, close to the river. Two companies Stafford and two guns being left under Col. Aldeyne to hold the enemy in front, we marched six companies Black Watch and six companies Stafford around the high range of hills, entirely turning the enemy's position, which we attacked from the rear. The enemy's numbers were not great, but their position was extremely strong and difficult of access, and they fought with most determined bravery.

"The Black Watch advanced over rocks and broken ground upon the koppies, and after having by their fire, in the coolest manner, driven off a rush of the enemy, stormed the position under a heavy fire. General Earle was among the foremost in the attack, and, to the deep sorrow of every officer and man in the force, was killed on the summit of the koppie. The Staffords attacked the high ridge over the most difficult ground it was possible for troops to advance upon, and carried the position. In this attack their gallant commanding officer, Lieutenant-Colonel Eyre, was killed. Meanwhile, the squadron of the 19th Hussars, under Colonel Butler, swept round to the rear, and captured the enemy's camp. Our success is complete, and the whole position is in our hands. It is difficult to estimate the enemy's loss, but their dead are lying thick among the rocks and in the open, where, when they found themselves surrounded, they tried to rush through our troops. Scarcely any can have escaped.

"Our advance by river will be continued to-morrow at daylight, and I shall endeavor to carry out your instructions to General Earle, with which I am acquainted."

A dispatch from Kirbekan says:

"A visit to the scene of Tuesday's battle shows that the enemy's position was strongly fortified and carefully protected by screens of stones and rocks. The South Stafford Regiment was only able to capture the high ridge by climbing on their hands and feet. The ridge is about four hundred feet high."

"LONDON, Feb. 11, 1885.—The following are additional particulars of General Earle's battle on Tuesday: After the British forces had succeeded in completely surrounding the enemy's position on Tuesday morning, General Earle commanded the Black Watch regiment to carry the enemy's works at the point of the bayonet. The regiment responded gallantly to his command. The pipers struck up, and with inspiring cheers the men moved forward with a steadiness and valor which the enemy were unable to withstand, and which called forth expressions of admiration from the lips of General Earle. From loopholes in the enemy's works rifle puffs shot out continuously, but the Black Watch kept bravely advancing. They scaled the difficult rocks which lay in their path, and drove the rebels from their shelter at the point of the bayonet. Unhappily General Earle fell at this point as he was gallantly leading his troops to victory.*

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* When hardly anything else is to be obtained but dry official accounts, it is somewhat refreshing to find a a scrap of individual narrative. The following is taken from a letter of a private soldier to his mother—published in the *Nineteenth Century*, June, 1885. It illustrates the difference between *official* and *actual* history.

"I read with some interest the account of our little, though important, battle of Kerbeka. I see also that, as usual, through all our three campaigns, the poor public-forgotten 19th Hussars has no mention, excepting that it captured the enemy's camp before their position was taken, with twenty banners, of which twenty I am the possessor of one. The account of General Earle's death is somewhat exaggerated. The real thing is this. After the whole of the position was taken, Earle went up the rocks to inspect a small hut (mud) in which some rebels

"Meantime the cavalry pushed beyond this scene of conflict and captured the enemy's camp, three miles to the rear of their intrenched position. This manœuvre was accomplished before the Black Watch had succeeded in carrying the main position.

"While the main attack was being delivered, two companies of the South Staffordshire regiment were directed to seize a high rocky hill which the Arab riflemen were stoutly defending. The British sprang boldly to the charge, but the enemy clung desperately to their position and disputed the ground inch by inch. But the men of Staffordshire were not to be denied, and they finally drove the enemy from the hill. This brought the battle of El Kirbekan to a close. From first to last it was gallantly contested.

"The enemy consisted of Arabs of the Monassir and Robatat tribes. With them were numbers of dervishes from Berber. It is impossible to judge of the number of the enemy, owing to their extended position and the rocky nature of the ground. The corpses of the Arabs who were slain lie in heaps upon the ridges from which they were driven by the British charge. The leader of the foe, who was from Berber, and several emirs were among the killed. The number of fugitives who escaped from the field of battle was very small."

On Wednesday the cavalry, half of the Cornwall regiment, and the Egyptian camel corps advanced three miles and occupied a strong position pending the arrival of the remainder of the column.

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were suspected to be secreted. He was warned not to do so, but he poked his head in at the hole used for a window, put it out again, and beckoned to some one below. Again he put his head in at the fatal window, and as he withdrew it and looked around again, the muzzle of a rifle was placed close to the back of the General's head, and the vagabond inside blew his brains out, the charge coming out of the front of his helmet; the fellow then threw the rifle at him. The man was brought out of the house by Major Slade, of the Intelligence Department, and was instantly cut into a hundred pieces. There was another house found with a horse and camel, and inside were twenty-six men and their store of ammunition, and the whole lot were burnt alive in the house, and blown to atoms by the continuous exploding ammunition; the horse and camel were also burnt to a cinder; so that really, you see, the General met with his death through inadvertence. He was a brave man, and deserves all credit. When our column marched out on that eventful Pancake Day, we Hussars scouted away in front of all; next came the poor General leading the infantry, amongst whom was Colonel Eyre, of the Staffordshire Regiment, notable in that he rose from the ranks; and when the General gave the order to charge the enemy, Eyre was the first up the hill, and turning round he shouted, 'Come on, you men of Staffordshire; I 'll take this point or die in the attempt'; upon which the men rushed up the hill and took it gallantly, and bayoneted every Arab in it; but the brave old Colonel was shot down.

W. H. SAUNDERS, G Troop, 19th Hussars.

It would appear that General Wolseley had not yet opened his eyes to the impossibility of continuing the campaign, for on the 13th of February he telegraphed the Khedive that he believes "there will be no more fighting along the Nile until General Brackenbury *reaches Berber* with the late General Earle's force."

If he had ever reached Berber he would have found himself out of range of all help, surrounded on all sides, and with no other alternatives but to die in battle or by famine. It is absolutely inconceivable that Wolseley could have thought for a moment of letting him advance farther when he knew that Sir Redvers Buller was preparing to retreat, and all the steamers were lost. That he was so slow in coming to a just estimate of the hazardous position of his two detached columns speaks ill for his generalship. His only excuse is perhaps the wild dispatches from London bidding him capture Berber at any cost, and at the same time giving him *carte blanche* as to future operations. In the meantime, Brackenbury, having advanced but a short distance above Kirbekan under continually increasing difficulties, crossed his entire force to the east bank of the Nile on the 25th of February, and had hardly done so when he received orders to fall back at once upon Korti, where the entire army was finally re-concentrated on the 9th of March. But Wolseley's position was still one of the greatest peril, according to all the rules of probability. Judging from the ability and the wonderful energy the Mahdi had displayed before, it was to be supposed that after the capture of Khartoum he would hurl his entire force against the British, and that the Bedouin tribes occupying the deserts for five hundred miles in their rear

on each side of the Nile would rise *en masse* to cut off their retreat, inflamed by religious enthusiasm as well as as by the knowledge that the rich spoils of the British army would be theirs in case of success.* If these Bedouins had combined together, there could have been no escape for Wolseley. His only base of supplies was Cairo, from which he was separated by twelve hundred miles of desert. True, the Nile was there, but falling more and more every day for four months to come. Then the fearful heat was even now coming, the terrible Khamseen, which no Europeans could withstand if compelled to keep moving without shelter. No supplies or reinforcements could possibly reach him in less than three months, if ever at all. If the Bedouins, avoiding battle, had kept the British at the centre of a movable circle of twenty or thirty miles in diameter, removing and destroying all supplies within their reach, complete destruction must have been their fate.

But with barbarians every thing goes by impulse, and in the East it is always the improbable—almost the impossible—which happens. Dissensions arose in the Mahdi's ranks immediately after the capture of Khartoum. Part of his soldiers scattered to take their booty home. The Baggaras, his first proselytes, dissatisfied at the small amount of plunder found in Khartoum, deserted him and joined a rival prophet, named Muley Hassan Ali, who arose in Kordofan, claiming to be the true Mahdi. He defeated Mohammed Achmet's troops and entered El Obeïd in triumph, mounted upon a white horse and bearing a naked sword, given to him by the prophet Mo-

* The Ababdehs and Bishareens are the sole occupants of the Eastern Desert as far down the Nile as Edfou (See map).

hammed himself to slay the false Mahdi. The magnificent success which should have placed Mohammed Achmet on the highest pinnacle of power was, in fact, the beginning of his decadence. After being killed some ten or twelve times by the journals, he finally died of smallpox in July, leaving his prophet's mantle to another Mahdi, who was soon after assassinated by his own followers.

To these peculiarly Oriental circumstances Wolseley, "the lucky," owed his escape from the trap into which he had ventured. On the 23d of March he ordered the evacuation of Korti, alleging with much truth the fatal effects of the climate. Typhoid fever, dysentery, and sunstrokes were increasing among the troops, even before the advent of the dreaded Khamseen. The army fell back to Dongola—thence to the second cataract, where Sir Redvers Buller was left with two brigades; the rest went back to Lower Egypt, while Lord Wolseley himself returned to England in May, to be loaded with rewards and honors for having made one of the most egregious failures on record, for it was not due to any defeats in battle, but solely to vacillation and delay.

The last act in the drama is Gen. Graham's second campaign at Suakim. Why it should ever have been undertaken nearly two months after Gordon's death and when Wolseley's force was already in full retreat, it is difficult to explain. But what could be expected from a government that had never known its own purpose for a month ahead? It had refused aid in the Soudan when it was easy and opportune, and afterwards sent an army when it was too late; it had proclaimed peace at Khartoum, and at the same time slaughtered 6,000 Bedouins

at Suakim to prove its peaceful intentions; it had invited Turkish intervention and then forbidden it even at the cannon's mouth; it had sought Abyssinia's help and alliance and refused to pay the price she asked, though not one tenth of what was afterwards spent in failure; and now, when really the war had no longer a *raison d'être*, a fresh campaign was inaugurated for no other purpose than vengeance. To restore England's prestige and avenge Gordon's death, Khartoum must be captured and "the Mahdi must be smashed!" And to do this, the Suakim-Berber route was once more selected, without any consideration of last year's experience.

My opinion might be considered by some as tinged with American prejudice, but the British journals abound with much more severe denunciations. Here is the judgment of Sir A. H. Layard, formerly Minister to Constantinople, and of world-wide celebrity, from his letter to the *Times*, dated Feb. 14th.

"It is scarcely necessary for me to refer to what I consider the unnecessary, and consequently wicked, bombardment of Alexandria, and the short but bloody campaign on the Nile; the shocking and useless slaughter of the Arabs near Suakim, with whom we had no cause of quarrel; and the hopeless mission of the heroic Gordon, and his desertion and death. These events, and the most culpable vacillation and delays on the part of the government, have led to the expedition to Khartoum in which we are now engaged, which has already cost us the lives of many brave men, and will cost us the lives of many more, whom England, in these critical times, can ill spare.

"Why are we going to Khartoum? No one, it seems, can answer the question. And yet the soil of the Soudan is reeking with the blood of our soldiers and with that of the wretched Arabs, whom we are pleased to call 'rebels.' Why 'rebels'? They are not our subjects, and have done us no wrong. Gordon, betrayed by his own government, has fallen in a war brought on by ourselves while holding a fortified place to which we had no right. Hitherto England has not been wont to avenge the death of her heroes by the wholesale massacre of brave men.

"I have only glanced at a few of the blunders—and worse than blunders—committed by the government. But it is useless to recur to the past. What is to be done in the future? We must now of necessity, and at any sacrifice, take Khar-

toum, not to avenge the death of Gordon, but to restore our prestige and credit, which the incapacity of the Ministry has so seriously compromised. To retreat would be to make Eastern races believe that we had been defeated and driven back by the undisciplined hordes of the Mahdi—a belief that might be productive to us of the most serious consequences. We cannot retain Khartoum permanently; we cannot allow any European Power to possess it. Nor can we abandon it to the wild tribes of the Soudan. To do so would be to expose those who have befriended us to massacre, to endanger Egypt proper, to re-open the slave trade on a vast scale, and to destroy our commerce in those regions. It appears to me, therefore, that we have only one course to pursue—to allow the Sultan, who is the legitimate owner of the Soudan, to occupy it. We cannot consistently with our reputation and dignity ask his aid to take Khartoum; but when we have established ourselves there, and made the so-called 'rebels' feel our power, surely there would be no loss of either if we handed over the country to those who have a right to it. It would, indeed, be well worth our while to assist the Sultan to occupy it by helping him with our transports and by forwarding his troops inland. It would, in the end, be a considerable saving of blood and money were we to do so.

"But, it will be objected, Turkish rule is bad and corrupt. At any rate, it would be better than the anarchy which would prevail in the Soudan after we had abandoned it; for there are no native elements out of which a strong and stable government could be formed. We could take measures to restrain any abuse of power on the part of the Turkish authorities—by keeping, for instance, at their side a capable and energetic man in some such capacity as our Commissioner. In the hands of the Mahdi, or of any one likely to succeed him, Khartoum would again become a centre of the slave-trade. With Turkey we could combine for its complete suppression."

Sir Henry Layard's plan, as marked out in this letter, might be liable to objection; but it had at least the merit of a definite object in view.

Between the 10th and 15th of March, Gen. Graham's force of about 5,000 of the *élite* of the British army, comprising, among other regiments, the Coldstream and Grenadier Guards, the Royal Artillery, the 5th and 17th (Irish) Lancers, landed at Suakim and repeated the performance of the preceding year with much greater loss and less success. The movements were so similar that it becomes tedious to describe them in detail. The first step was always to establish zeribas and water-depots before moving a few miles from Suakim; then having a

brush with the enemy and—going back. On the 20th of March an engagement took place at Hasheen which nearly resulted in disaster, as is shown by the following account:

"The Arabs displayed desperate bravery. The marines drove them from the hills and forced them to retire to the plains. Then the Indian troops charged upon the Arab position, but were outflanked, and an unsuspected body of Arabs succeeded in getting behind their line. The Indians (Bengal cavalry) found themselves between two fires and they fled. During this retreat they were closely pressed by the Arabs, who hamstrung the horses and speared the riders. The Bengalese fell back in confusion upon the English infantry and guards, who had been formed in a hollow square, and the square leisurely retired while the Arabs were yelling that they had regained their lost position. At this juncture the artillery came to the rescue, and a brisk fire of small-shot from the machine-guns and shells from the Krupp field-mortars drove the Arabs from their position. The marines maintained a steady firing throughout the engagement.

"The honors of the day are probably due to the Irish Lancers, who changed the tide of battle by a desperate charge and retrieved the fortunes of Gen. Graham's command when they seemed almost hopeless. The British troops have returned to their former camp, near Suakim."

On the 22d another and more serious conflict occurred upon the same ground, which is thus described:

"SUAKIM, March 22d.—While detachments of English and Indian infantry were making a zeriba seven miles southwest of Suakim to-day they were suddenly surprised by a rush of Arabs who had been massed and concealed in the defiles west of Hasheen.

"The English formed a square as quickly as possible, but the camels, mules, and horses were driven back in confusion on the troops, causing a stampede, and amid clouds of dust the Arabs penetrated the south and north sides of the square. Meanwhile the marines and Berkshire Regiment, who were on the east and west sides of the square, maintained a continuous fire, holding the enemy at bay, while a charge of the cavalry and the fire from the guns at the Hasheen zeriba checked the onslaught of the Arabs, which at first threatened a serious disaster to the British."

"March 23d.—Nearly all the casualties were due to spear thrusts received in hand-to-hand engagements. The Arabs got between the transport train and zeriba, speared the men of the transport corps, and killed the animals. They fought savagely, refusing to give or take quarter.

"Gen. McNeil, who was commanding the zeriba, reports vaguely that there were several thousand rebels in the fight, and that over one thousand were killed or wounded. Gen. McNeil is blamed for not taking precautions against a surprise.

"The damage done to transport materials yesterday is immense. The guards and artillery were sent to reinforce the troops who were attacked. The whole British force remained in the field during the night.

"The camels and mules were hamstrung by the Arabs. Scores of camp-followers were cut up. Arabs scattered about in the whole vicinity intercepting native fugitives. The appearance and yells of the Arabs were so sudden that the whole assemblage of transport animals, mixed with natives, became panic-stricken and surged on the zeriba, making resistance hopeless. The scene was indescribable. Arabs glided and crept in all directions among the animals. The Hadendowas swarmed from the bush like magic and attacked the zeriba fiercely on all sides. The Soudanese coolies were mistaken for enemies, and many were killed by friends.

"The enemy began an attack at 3 o'clock this morning. They were repulsed, and the ground was cleared by 4."

"LONDON, March 23d.—Gen. Graham telegraphs from the advanced zeriba that the British position there is strong and secure against any number of the enemy. He regrets the serious British losses in yesterday's fight, but exonerates Gen. McNeil from blame, believing he did the best that could be done under the circumstances. Gen. Graham praises the gallantry of all the troops. He says the cavalry would have given the alarm had not the rugged nature of the ground prevented their seeing more than a short distance. Though the rebels met with a temporary success, they learned a severe lesson. The corpses of over 1,000 Arabs have been counted on the field of yesterday's battle, including the bodies of many noted chiefs."

"LONDON, March 24th.—The *Standard's* Suakim dispatch says the British killed in the engagement of Sunday were seven officers and sixty-three men. Many bodies of boys and women were found on the battle-field."

In this fight the total loss on the British side, including friendly Arabs, was greater than ever before, being 580 killed and wounded and 1,000 camels.

This engagement was followed by the inevitable return to Suakim. Though the British advanced zeriba was secure, as General Graham said, against any number of the enemy, it was a physical impossibility to hold it, for the labor of keeping a water-train constantly going over these seven miles, protected by troops every step of the way as it must be, would have speedily worn out the whole army. How much security or tranquillity the British enjoyed in their lines around Suakim is vividly

described in the following Soudan correspondence of the London *Telegraph.*

"How the Hadendowas do it nobody but they themselves can tell, but night after night they come into the middle of our camp, stab and hack a few soldiers, and go out again scathless. Sometimes they creep in five abreast past our sentinels; sometimes they come right up to our tents, half a mile within the line of redoubts and pickets, and bring camels and horses with them. But, whatever the audacity of their entrance, the impunity of their departure is the same. Our guards turn out, bugles sound the alarm, signals flash, rifles are let off, a gun-boat fires overhead into black space, but next morning there are only our own mutilated and dead in evidence of the assassins' presence. The Hadendowas have left none behind them, or had none to leave. It is horrible in the highest degree, this monotony of midnight murder, and depressing beyond language to find our head-quarters' staff apparently so unteachable by experience.

"Crawling along on all fours, they traverse the space between them and their victims with all the patient caution of wild beasts stalking prey. They reach the doomed tent. For the sake of the sea breeze the doorway is open, and the next instant the murderer is standing by the sleeping soldier's side. He feels a hand passing over his body and starts. A cry is rising to his lips. It is strangled in his throat by a groan of pain, and before the gallant fellow can even warn his comrades the fierce spear is driven home through his body, the heavy two-handed sword has fallen across him. But the tent is alarmed. There is no time to lose! Slashing this way and that, the murderers stab and hack with the fury of fiends, and then as the camp starts to its feet in clamor they are off. Not a sound betrays their passing. There is no trace of blood to tell of retribution. They are gone—back into the villainous gullies, back into the scattered brush, and next we can imagine them sitting to refresh themselves outside our line of redoubts—to listen gleefully to the storm they have raised—the bugles telling the old tale of murder completed and the murderers gone, the aimless volley of rifles, the din of voices, the impotent utterances of our indignant guns roaring for an impossible vengeance. They hear the tempest of the camp's alarm swell up and dwindle away, and then quietly get up and pass on to where their friends are waiting to congratulate and to rejoice—to rub their spear-heads against the red tips of the assassin's weapons, to smear their swords with the blood still wet on their blades. And in our camp? The hospital stretchers there are carrying away the mangled, mutilated bodies of our men, their comrades standing to their arms, savage with useless rage, as they look at the lantern-lit group of surgeons and wounded. It is a horrible episode, yet of nightly occurrence.

"'Murder! Murder!' I heard the word ring out last night from the ordnance camp and then came a cry—the bitter cry of a man suddenly overtaken by the agony of death. A shot and then another and another. Then a confusion of muffled sounds. Then silence. I was only 400 yards away. The night had been so still that the water lapping on the quay was plainly audible where I lay. Presently came this brief uproar of alarm, subsiding as suddenly as it had arisen.

Signals were flashing overhead. A party of Hadendowas had either crept straight across the camp, or passing along the rear, had traversed its complete length, crossing twice on their way the electric light thrown by the Dolphin, had reached, without being observed, the farthest batch of tents from their starting-point, the nearest to the town. Behind them, only a hundred yards off, was Quarantine island, with its camp; nearer still lay our shipping, with the gun-boats close in shore, commanding one line of their retreat, the whole of the British troops intercepting the other. Behind them was the sea; on their left the town, yet, such is the confidence inspired by nightly success and impunity, that the assassins did not hesitate to creep even into such a desperate position as this. And their work was desperate and terribly complete. Of the whole of the occupants of the tents—24 in all—only two escaped their spears and swords, while the murderers retreated apparently unharmed. As they went back rifles were wildly emptied after them, and the Carysfort fired volleys into the dark. But there was no trace of blood. Inside the tents the sight was dreadful—blood everywhere, and men lying about in all directions wounded and groaning."

On the 28th of March, General Graham having constructed more zeribas and established additional water-depots, moved again to the position occupied by General McNeil on the 22d. In two weeks he had approached only two miles nearer to Tamaï, the old battle-ground of last year. The heat was growing fearful, sunstrokes and fever cases multiplying greatly. Finally, on the 2d of April, he advanced to Tamaï, and found it evacuated. After resting and watering his troops, he burned Osman-Digma's camp, as he had done last year, and returned to Suakim on the 4th. The wily Bedouin was learning lessons in war; he had ordered his followers to avoid a regular battle, and to draw the British after them into the hills. At this time Graham was instructed to open negotiations with Osman-Digma, which the latter refused to entertain.

It must be stated here that, in connection with Graham's expedition, a second attempt was made to construct a railroad. The London *Engineering* contained the following information:

"The military authorities have at length made up their minds, and a standard gauge railway is to be laid from the Red Sea to the Nile. The construction of the line does not appear to offer any obstacles which railway engineers are not in the habit of contending with. There are said to be eleven groups of wells in the total distance, but many of these would be utterly inefficient for engineering work.

"The military authorities have, however, determined to be independent of such chances, and have made a contract, according to which a four-inch pipe is to be laid along the whole route.

"H. G. H. Tarr, of Yonkers, N. Y., has been offered the contract of laying the three hundred miles of pipe across the desert to supply water to the English soldiers in the Soudan. He has not decided whether he will accept the contract.

"The pumps are to be supplied by the H. R. Worthington Hydraulic Works, of New York, who have achieved such a signal success in the pumping of petroleum through long distances in America. There are to be six double pumps, with steam cylinders eighteen inch in diameter by eighteen-inch stroke.

"The Admiralty has been directed to find the necessary vessels for transporting the plant to the spot, and shipments were to have been made, it was said, this week, both from Hull and London. Each vessel will take a complete equipment for the construction and working of five miles of the line, so that should any mishap occur to one vessel, the whole work will not be detained for want of some vital feature. The list made out includes a locomotive and ballast trucks and trollies, one crane, two crabs, pumps, steam boilers, permanent way complete, electric light plant, and all other necessary appliances, including fifteen thousand sleepers, etc., etc.

"As for the time that will be taken in the construction of the line, it is very difficult to make a forecast with any pretence to accuracy at present. The great important and uncertain factor at present is the question of *native labor*. If that can be obtained easily on the spot, a great part of the difficulty will be overcome. In any case, the first instalment of plant cannot be landed at Suakim much under a month, and it will doubtless be well into May before the whole of the appliances are on the ground. It is evident, therefore, that this proposed line can have little influence on the present military situation on the Nile."—*Engineering*, Feb. 20, 1885.

The *Illustrated London News* added:

"It has now been decided also to lay down the long-talked-of railway to Berber. The route chosen will be about two hundred and seventy miles in length, and will run over the best water district, there being, however, a perfectly arid stretch of fifty miles. The work will be carried on by Messrs. Lucas & Aird, who have informed the Government that the first thirty-five miles of railway gear has already been arranged for, and will be ready for shipment this week. If all goes well, the railway will be constructed in four or five months."

The *London Times* of Feb. 20th made the following prophecies. [The italics are my own.]

"Arrangements have already been made by Messrs. Lucas & Aird for the co-operation of natives, and workmen from other parts will also co-operate with the men now sent out immediately on their arrival. Thus, the public may rely on the fact that there will be no hindrance or delay in pushing the road to the front.

"The reports point to a fight in the neighborhood of Tamaï or Tamanieb, *and this will be followed up by a rapid advance to Sinkat*, where it may possibly be desirable to garrison for a time. Sinkat is comparatively cool, and would form a healthy summer station, the occupation of which would probably paralyze the action of the tribes, and enable the railway pioneer force to advance along the northern route unopposed. It has generally been believed that the movement of a small force to Berber would have been possible after General Graham's victories last year, and this is still more likely to be the case now, *when, after defeat, the Arabs will be at once followed up to their stronghold.* The probability seems to be, therefore, that after one battle the military situation in this portion of the theatre of war will clear itself; while there can be little doubt that the final suppression of Osman Digma will produce a moral effect at Khartoum."

The "*Thunderer*" was certainly most unfortunate in its predictions when assuring the public of *the fact* that there would be "no hindrance or delay in pushing the road to the front." It failed to take into account the rather serious objections the Bedouins made to its construction. Its surmise that a fight at Tamaï or Tamanieb would be "followed by a rapid advance to Sinkat" was equally unlucky, and all its prophecies were completely falsified by events.

But, in my opinion, the most absurd idea of all, considering the localities and circumstances, was that of constructing a line of pipe to convey water from Suakim to Berber. The credit (?) of originating it was claimed by one of the New York dailies. Now, although an American editor is expected to know *everything*—and a good deal more,—he may be excused for being unfamiliar with the peculiar difficulties of the Soudan deserts. Some months before, another New York daily had given its readers a highly imaginative and fictitious description of the shady groves, smiling oases, enlivened by the warbling of birds, and the purling streams to be found on the Sua-

kim-Berber route! But that the British military authorities, who *ought to have known*, and had no possible excuse for not knowing, the nature of the country and the obstacles in the way, should have at once jumped at the idea and proceeded to make contracts for carrying it out, is really inconceivable. I hope Messrs. Worthington & Tarr were given the contracts, and made a good thing by them. They were not responsible for the imbecility of the scheme. It seems to have been imagined that there was nothing to do but to lay the pipe down and cover it with sand, for the paper said:

"It has been settled that the pipe is to be laid in zig-zag lines to allow for expansion and contraction under the sand. The laying of the pipe, if a sufficient force of men is put to work, ought to proceed at the rate of about twenty miles a day. [Twice as fast as an army could march!] An American gentleman conversant with all the details of the oil pipe-line system, now in London, is in consultation with the British Government, and there seems to be a disposition to expedite the work.

"It will, of course, be necessary to have a guard at every pumping-station on the route. These stations will also be stopping-places for the railroad trains."

There were to be engines every twenty-five or thirty miles, and water was to be supplied at the rate of one hundred and fifty gallons a minute, or over two hundred thousand gallons per day, which would have to be obtained chiefly from the condensers at Suakim! And what would the Bedouins be doing all the while?

All this shows the absurdity of trying from the "Horse Guards" in London to direct operations in a country thousands of miles away, and about which the Commander-in-chief and his advisers evidently knew nothing. It also illustrates the folly of supposing that the same means will accomplish the same results in regions differing so entirely and absolutely in every re-

spect as Pennsylvania and the Soudan. It was assumed that because a pipe-line had been highly successful in conveying oil hundreds of miles in America, it would be equally available for conveying water in the desert. But in America supplies of all kinds, transportation, water, fuel, timber, workshops, machinery, willing and intelligent labor, are to be had in abundance far exceeding the demand; and in addition, perfect peace and the full protection, not only of the law but of the entire community, ensuring the swift punishment of any trespasser daring to tamper with the line. In the Soudan, on the contrary, no supplies, no water, no timber, not even a practicable road. Every stick of timber, every railroad tie, every pound of coal, to be brought from abroad. Not only no native labor to be had, but every Bedouin bending all his energies to prevent the construction of the line, and to cut it in a hundred places every night if it were ever built!

Now, let it not be supposed that I claim credit for extraordinary acumen or prophetic foresight for asserting before the railway was shipped and Graham sailed that the former would never be built and that the British would never advance twenty miles from Suakim. My predictions were based upon my *knowledge* of the country, and I would have confessed myself an idiot if I could not have formed a correct judgment. But the point I make here against the British military authorities is, that this same knowledge had been perfectly accessible to them for six years at least, and that there was no excuse for their not mastering it, or for not drawing correct conclusions from it. In my letter to the New York *World*, published March 1, 1885, I used the following language:

"My knowledge and experience of engineering must be behind the times, for I confess I cannot conceive of any patent-lightning process by which a railroad can be built in a few weeks across a lofty chain of mountains, eighty miles broad, and then one hundred and sixty miles farther, when not even a line has ever been surveyed, and when the only trail goes up and down grades so steep that camel-riding is often unsafe. Think of the grading, blasting, tunnelling, etc., that must be done before the track can be laid—in a country where even wooden ties must be brought from abroad; for all the stunted mimosas between Suakim and Berber could not yield ties enough for ten miles. And who is to build this railroad under this tropical African sun? Nothing has been said about bringing laborers to do the work. I fancy the job is not attractive, and even for high pay it will not be easy to obtain them. Are the soldiers to build the railway? They would have quite enough to do to protect the laborers from the attacks of the Bedouins, unless we suppose the latter to fold up their hands and look on meekly while the road was building. And if the road were built, how many regiments would have to be echeloned along the line to keep it from being cut at a hundred points? The idea seems too absurd for serious contemplation, and yet some British officers who could see from Suakim the majestic chain lifting its lofty crests less than fifteen miles away, asserted six weeks ago that a narrow-gauge road could be laid as fast as the troops can march! But the project was soon abandoned, as it will be again beyond a doubt.

"General Graham may once more land his troops at Suakim, but mark my words, the Coldstream and Grenadier Guards who have just left London will never march to Berber."

Referring to the pipe-line scheme, which had just been published, I added:

"The scheme is so idiotic that it must be a *canard*. How could it be possible to procure distilled water enough for an army and its animals in the first place? But if enough could be produced, how could the pipes be laid across the mountains and plains for two hundred and fifty miles? [with the enemy all around]. If laid, how could they be protected from being cut? . . . Moses himself in the Sinai desert never attempted such a miracle!"

How the plan worked is shown by the following press dispatch:

"April 25, 1885.—The building of the Berber Railway has been suspended outside of Suakim, owing to the inability of the army to afford protection to the line beyond the camp. It has been decided that the forces necessary for such protection cannot be spared."

Not only so, but nightly attacks were made upon the British outposts, in which the Bedouins often succeeded

in burning quantities of the wooden sleepers and other material brought from England at great expense. Only a few miles were laid, to be quickly torn up by the enemy. Three months later the steamers, which had never even unloaded the material, took it back to England, and that was the last heard of the railway and the pipe-line. General Graham was a distinguished engineer officer, that being his special arm of the service; he had a splendid record,* and he and Herbert Stewart did the most and the best fighting in the Soudan. He understood perfectly that a railway to Berber can never be built while hostile Bedouins hold the deserts, and in all the accounts of the war, I have not seen a single word to show that he ever advocated the undertaking.

The burning of Osman-Digma's camp was the last episode of the campaign. On the 7th of May, Lord Wolseley came from Cairo to Suakim by sea to review Graham's army and compliment it on its achievements. After this the two generals and all the troops re-embarked, leaving a garrison of one thousand two hundred marines at Suakim, who from that time forth were closely besieged in their lines, protected by gun-boats. It was officially reported the following August, that of that number only one hundred were fit for duty in consequence of the terrible effects of the climate.

* "General Graham entered the British army as an ensign in the Royal Engineers, in 1850. He served through the Crimean war with that body, receiving promotion for his gallantry and gaining the highly-prized Victoria Cross for heading a party in an assault by ladders at the Redan. Twice during the Crimean war he was wounded. In the Chinese war General Graham also distinguished himself, taking part in the assault of Tangku and the Taku forts, and also in the capture of Pekin. His promotion was gained step by step, until, in 1881, his present rank was reached. In the campaign against Arabi, in 1882, General Graham commanded the Second brigade, and won new honors."

The condition in which the country and the people were left by the British evacuation is well described by the war correspondent of the *London Graphic*, in a letter dated May 30, 1885, as follows:

"The withdrawal of British troops from the Soudan goes on rapidly, alike on the the Nile and at Suakim. Dreading the arrival of the Mahdists on the departure of the British from Dongola, the majority of the population are fleeing north, and the authorities are obliged to provide shelter and food for the refugees at Wady Halfa, while trying to induce some neighboring powerful sheikh to take the government of the district. The Mahdi, however, has retired up the White Nile to Jebel Ellini, and announces that he will not advance on the Dongola district till after next Ramadan. Indeed, he is thought to have little chance of doing so, as his influence is weakened by the growing power of his rival the anti-Mahdi, Sidi Muley Achmed. One by one the positions beyond Suakim, which have been so carefully fortified by the British, are being abandoned. Otao and Handoub, on the road to Berber, have been evacuated; and though the railway is still protected by the frequent running of an armored train, the Arabs tear up the rails, and indulge in small skirmishes whenever possible. It is evident already that the tribes are flocking back to Osman Digma, even many of the friendlies, taking with them the British weapons they have received. Suakim itself is in a state of perpetual confusion, with troops continually embarking, the harbor filled with transports bearing the now useless railway stock, and sickness and depression prevailing amongst the soldiers. The heat seriously affects Indian as well as British regiments, and over 1,100 have been invalided within the last two months. Airy huts, with thatched roofs, are being constructed for the men. Lord Wolseley has gone back to Cairo, handing over the command of the Nile force to General Dormer, and preparations are being made both at Cairo and Alexandria for the temporary accommodation of the British troops. The Guards have at last been disembarked at Alexandria, and this proceeding raises anew fresh comments as to the change of plans, none of which are over-complimentary to England and her vacillation. Egypt looks anxiously for the reply to the British note, inviting Turkey to occupy Suakim and other Red Sea ports. If Turkey refuses, the note states that England must arrange for some civilized Power to occupy the positions, while, as soon as order and a stable government are secured, the English troops will be withdrawn from Egypt."

Meanwhile the probabilities of war with Russia about the Afghanistan question diverted public attention, and the Soudan almost passed out of mind. The Soudanese, however, have persistently continued their advance. Dongola fell into their hands, and in December they became so threatening that Sir Redvers Buller, then

commanding at the second cataract, found it necessary to drive them back. He advanced from Wady Halfa, and on the 30th of December, 1885, he met the enemy at Ghinnis. The usual result occurred. There was a skirmish, a few volleys fired, and the Bedouins, after leaving two hundred or three hundred killed and wounded on the field, retreated, to advance again as soon as the British retired to their former positions. Lord Rosebery, Foreign Secretary, subsequently instructed Sir Henry Drummond Wolff, the British Commissioner in Egypt, to withdraw the British troops from Wady Halfa. So that the whole of Nubia, as well as the entire Soudan, is abandoned to the horrors of anarchy and brigandage. It was found impossible, however, to withdraw the British from the first cataract without exposing Egypt herself to the danger of invasion. A few regiments are still at Assouan (1886), and their condition may be inferred from these extracts from letters published in the London journals.*

"While men's minds are wholly occupied with the Irish question at home, our troubles abroad are certainly not decreasing. In Egypt and Burmah the flower of the British army are being sacrificed.

"Our best troops are silently perishing by disease on the banks of the Nile. Our bravest officers, with the courage of their race, are sacrificing their lives, one after the other, in the vain attempt to remedy one continued series of mistakes, which commenced with our occupation of the country, and seem unending. In each instance of wanton and uncalled-for interference with foreign nations we have failed ignominiously. We went to Egypt avowedly to put an end to Arabi's rebellion, and to restore peace to the country. We have succeeded in maintaining just as much order as the presence of the British troops inspires; we have, indirectly, lost Egypt the Soudan; we have covered the desert with the bones of brave Englishmen and Arabs in our vain attempts to force back into subjection a province we had neither the wisdom to keep for Egypt nor the energy to reconquer; we sacrificed Gordon at Khartoum to the indecision and vacillation of a government which sent him there in a moment of panic, and kept him there a lingering martyr

* The printing of this paper having been delayed by various causes, I have added for the sake of completeness a few references to later events.

to its shameful violation of its promises of support. And now a second time we are playing the same miserable part in Burmah.

"How much longer are our troops to remain in Egypt? The reports from Assouan are most pitiable. The Dorset, Berks, and Durham regiments have each lost about four hundred men, half their strength, from enteric fever or from sunstroke. Five or six hours after the moment of attack suffices to carry them off. In the last month there were fifty-two deaths, and one man reports that the day before he left Assouan for Cairo eight men were lying dead in the mortuary, and five others were being buried. With the thermometer 126° in the shade, it is no wonder that our men die like fleas. Thus, four years after the first fatal step, English soldiers are still being sacrificed by hundreds in that terrible Nile valley."

The troops at Suakim are suffering quite as much. A correspondent of the *London Standard* writes:

"I cannot help wishing that the people at home knew the exact state of affairs out here. If they could only hear the howls of rage and vows of vengeance when some one reads aloud a statement in the papers from home that 'the climate of Suakim is pleasant,' they might think there were two opinions upon the subject. If being held in a vice of fearful heat is pleasant, Suakim is decidedly so. If men dying of heat apoplexy is a sign of a healthy climate, Suakim may be called salubrious. To live in a place where the temperature never goes below 96°, and frequently rises to 112° and 120°, is to drag out such an existence as none who have not experienced it can possibly imagine. To make matters worse, the epidemic of enteric fever continues unabated, and a melancholy procession to the cemetery may be seen always once, sometimes twice, a day. At the present rate of mortality more than half of the European troops here will be in their last resting-place within a year, and the other half will have been invalided home two or three times over. What with the smells from want of drainage, the fearful, torturing heat, and the condensed water, which is often putrid, Suakim is about the last place to keep Englishmen in. The Shropshire regiment, which came out over nine hundred strong, is now about seven hundred, and will be less when the next draft of sick men leave. They lost only two killed in a night alarm, and have had a reinforcement from Suez of fifty. Can any thing speak more plainly than this? Last year the Marine Battery, five hundred strong, invalided fifteen hundred men away, which means that it took two thousand men to keep up the regiment to the small strength of five hundred."

And what is there to show for all this fearful waste of treasure, and of what was still more precious—gallant and noble lives? National humiliation resulting from the consciousness of inexcusable failure; loss of national prestige throughout the world; bitter sorrow for the fate

of the hero to whom rescue came too late; Egypt despoiled of half her territory and crushed under the burden of additional debt; vast provinces where order reigned before, which were then rapidly opening to humanizing influences, and were connected with the rest of the world by increasing commerce and by telegraph, now so completely beyond the pale of civilization that nothing more is known of what is going on there than of the savages living around the equatorial lakes. These are some of the fruits produced from the evil seed planted on the ill-omened day when England was reluctantly induced to interfere in Egyptian affairs "in order that Shylock might have his pound of flesh." Speaking of that interference at Cooper Institute, in November, 1882, after the arbitrary and impolitic deposition of Ismaïl-Pasha, and the bombardment of Alexandria I said: "England, has sown iniquity, and she will reap disaster." How she must regret to-day that first fatal move which led step by step, to the final catastrophe! Sir Samuel Baker, who is so thoroughly familiar with the country and the people, protesting against the abandonment of Khartoum, even before Gordon was sent there to effect its evacuation, uttered these prophetic words in the *Nineteenth Century* for January, 1884:

"Khartoum is a name that is known among the wildest savages of equatorial Africa who never heard of Paris or of London; to them it is the centre of all that is great, and it is the capital of every thing. The abandonment of Khartoum would, in their estimation, be the disruption of a central power, which would imply impotence. The slave hunters have been suppressed by the authority from Khartoum, and the force required for that suppression has emanated from that centre of strength and government. If, therefore, Khartoum should be abandoned, the protection that was the support of loyal tribes of the interior would have been withdrawn, the supporting power would have been overthrown, and the slave hunters would again be in the ascendant. The result would be immediate: those tribes which have been

faithful to the government would become the first victims to those who had been against the government. A general anarchy would ensue, and the loyal would be sacrificed to the slave gangs which had been kept in subjection by the imperial forces. The slave-trade would be renewed with tenfold vigor, as no power would remain to curb the atrocities of the traders. This deplorable situation would render impossible all future attempts at government, as the natives would have lost all confidence of support; they would have seen that the loyal had been sacrificed by the abandonment of the government upon which they had depended for protection, while those who had openly defied the laws had triumphed by rebellion. All the good results of the last five and twenty years of exploration and energetic action against the slave-trade would have been entirely dissipated, and the end of the long struggle would have yielded victory to the wrong-doers. The work of sixty-four years, since the conquest of the Soudan by Mehemet-Ali-Pasha, would have been utterly destroyed, and the Soudan would relapse into the frightful barbarism described by Bruce a hundred years ago. It is ridiculous to suppose that any Soudan races are capable of self-government. If we refuse this to Ireland, how can we expect a better result from ignorant barbarians, who would extinguish all progress by a chronic inter-tribal strife? As local autonomy would be impossible should Khartoum be evacuated by the Egyptian forces, the Soudan, deprived of its capital, would resolve into a political chaos, until some superior force should take advantage of the general disruption, and restore order by military conquest."

Dark as this picture is, the reality is probably even worse, for the rumor comes that Khartoum has been razed to the ground, probably in consequence of the struggles for its possession by rival Mahdis and slave-hunting chiefs.

Of the British invasion of the Soudan, no traces will be left, except the bleaching bones of thousands of Bedouins on the banks of the Nile and the shores of the Red Sea, together with revived and redoubled hatred of that form of Christian civilization which could bring no better boon to those distant regions than the slaughter and destruction of a people that had never done England any wrong. In this connection a reflection almost forces itself upon every thinking man. If England had devoted to the education, the material and moral improvement of Ireland one tenth of the millions she has spent in the last thirty

years in unnecessary, if not unjust, wars against weak and uncivilized nations, how much stronger she would be now, and how much better she would deserve the title, which she arrogantly claims, of being the leader of Christian civilization!

I will add only a few words of comment. I have already said enough of the political and military vacillation, as well as the inexcusable and, it might be thought, wilful ignorance of the theatre of war, which precluded the possibility of success. As to strategic ability, none was displayed. Lord Wolseley's separation within reach of the enemy of his small force into three detachments, beyond supporting distance, showed a lack of generalship and common-sense, the consequences of which he escaped, not by any skill on his part, but through fortuitous circumstances, which he had no reason to count upon, and over which he had no control. Bad generalship may by chance escape the due punishment of its blunders, but it is none the less bad for all that.

As to the tactics employed, they were, perhaps, the best under the circumstances and before such an enemy, but military men cannot but wonder why an uncivilized and undisciplined foe, armed almost exclusively with swords and spears, should prove so formidable that an army of select British regiments, supplied with the best breech-loaders and abundantly strengthened with artillery and machine-guns, dared not meet them on the plain without constructing stockades and forming squares. Stranger, still, in three different engagements a square was broken, one being driven back eight hundred yards, and all its guns captured by naked savages *charging on foot*,—a deed which Napoleon's cuirassiers failed to achieve at

Waterloo in the days of slow-firing flint-muskets! A numerical superiority of four or five to one is hardly sufficient to explain this wonder, which must be due to several causes. *First,* the innate bravery of the warlike, indomitable Bedouins, who prize independence above life itself. Secondly, the contempt of life frequently found in savage races, perhaps because their existence offers so little to make it desirable; and, thirdly, the fanatical faith which inspires Mussulmans with the absolute conviction that from battle against infidels they fly straight to that delicious paradise of verdant groves, cool breezes, and rivers of milk and wine. Nothing could appeal more powerfully to the imagination and senses of a passionate race, whose lives are an incessant struggle against hunger, scorching heat, and thirst. How often in my desert marches have I seen those very same Bedouins,—at that time peaceable camel-drivers and goat-herds, trudging along day after day, half-naked, bare-headed, and barefooted, upon the blistering sand, with seldom water enough to quench their thirst, living on scanty rations of coarse bread or parched dourah and camel's cheese, and I wondered if they really thought life worth living! For such men battle and death have no terrors. Above the smoke of musketry and the sheen of flashing bayonets, they behold with the eye of faith the cooling spray of Eden's fountains; they see the peerless, black-eyed houris of paradise waving the Prophet's green-silken banners, and opening their arms to welcome the warrior to their embrace, and they rush upon death with the gladness of a lover meeting his bride. It cannot be denied that faith is strongest in ignorant races, and diminishes in proportion to intelligence and civilization. I do not question in the

least the sincerity of the average civilized Christian, but I very much doubt whether there are many who would gladly fly to certain death to gain immediate admission to heaven. They would more probably follow the example of those two chaplains of General Jubal Early's command in the Valley, whom he once met running to the rear at a 2.20 gait. The old soldier, who could swear as hard as he could fight, addressed them in his usual forcible style:

"—— Blankity blank your blank souls! Where the blank are you running to?"

They could hardly gasp out:

"—— General! the Yankees are coming!"

"—— Blankity blank you!" rejoined the irate General; "for forty years you have been wanting to get to heaven, and blank you, now you turn back when within just two minutes of it!"

There is a good deal of human nature in that. We all want to go to heaven some time or other—but not yet awhile!

The criticisms I have made may appear harsh, but they are mildness itself when compared with the denunciations of many of the most eminent English soldiers and civilians, expressed in Parliament and through the press, only a few of which I have quoted. It is an undeniable fact that the Soudan war was one of the most complete military failures of modern times, and that after all her expenditure of blood and treasure, England was forced to retire baffled from the struggle against barbarians. In the words of the *London Times*, of Feb. 13th:

"The Nile expedition, with its immense cost in men and money, represents a dead loss to the nation, a loss directly and wholly due not to the difficulties with which the government had to contend, but to the obstinacy with which they refused to recognize facts plain to all the world, and to assume responsibilities which it was their primary duty to discharge."

But errors of judgment, though lamentable, leave no stain upon British arms; for valor never shone brighter than when England's young soldiers, most of whom saw war for the first time, braved the terrible African heat and thirst, withstood unflinchingly the assaults of countless hordes of fierce Bedouins on the deserts of the Soudan, and plucked victory from the jaws of destruction.

One of the best traits of the English character is its love of fair play and its appreciation of a plucky foe. This was never better illustrated than in the Soudan war. Every official report, as well as the letters of all the war correspondents, express the most unstinted praise and admiration for the courage and unsurpassed gallantry of the Soudanese. Those veteran officers who had had most experience of war were foremost in their eulogies of the Bedouins' bravery. This generous tribute mitigates in some degree the horrors of war, and, coming from equally brave Englishmen, we may say of it in the words of a gifted poetess:

> " . . . accept it thus,
> An homage true they tender,
> As soldiers unto soldiers' worth,
> As brave to brave will render ! "

Unfortunate as were the results of the Soudan war, it was not without its laurels. England will feel a just pride in the prowess of her troops, who showed themselves worthy successors of the soldiers of Plassey and Assaye, of Salamanca and Waterloo, of Inkerman, and a hundred other glorious fields. Herbert Stewart, Burnaby, Earle, Eyre, and many other gallant soldiers, sealed with their blood their devotion to their country. England had

naturally the most cause to regret their loss, but every soldierly heart in every land joined with true sympathy in the feeling of sorrow for their fate; and perhaps it is no exaggeration to assert that the glory of having produced such a splendid type of modern Christian heroism as was exhibited in Gordon, is sufficient consolation for the failure of the campaign. An ancient poet said that an upright and resolute man struggling undismayed against adversity is the admiration of gods and men. Such a man was Gordon, England's Sir Galahad, her knight truly *sans peur et sans reproche.* While she justly mourns his loss, his noble life and death will remain a bright example for her soldiers in all time to come, and wherever civilization sheds her light, his name will be engraved high in the glorious roll of those heroes of humanity whose fame will never die!

CHRONOLOGICAL TABLE OF EGYPTIAN HISTORY, FROM MÉHÉMET-ALI TO 1886.

1769.—Mohammed- or Méhémet-Ali born at Kavala, Macedonia.

1801.—Goes in command of a band of Albanians to fight the French in Egypt.

1805.—Proclaimed Viceroy by the Mamlook Beys.

1807, March 7.—British invasion of Egypt. Gen. Fraser captures Alexandria.

1807, Sept. 14.—Compelled to evacuate Egypt after great losses. 1,000 heads of British soldiers killed in battle exposed on Place de Rumelia, Cairo. British prisoners well treated and returned without ransom after evacuation.

1811, March 1.—Méhémet-Ali exterminates the Mamlooks at the Citadel, Cairo, and throughout Egypt.

1811-1818.—Suppression of Wahabee rebellion in Arabia by his son, Ibrahim-Pasha.

1815.—Méhémet-Ali organizes his army upon European system.

1820-1821.—Conquest of Dongola, Sennaar, and Kordofan. Ismaïl-Pasha burnt to death at Shendy.

1823.—Méhémet-Ali founds Khartoum, capital of the Egyptian Soudan.

1823-1827.—Ibrahim-Pasha's campaigns in Greece. Destruction of Turkish and Egyptian fleets at Navarino (1827).

1832.—Méhémet-Ali rebels against Sultan. Ibrahim defeats Turks at Koniah (Asia Minor). European powers interfere and stop Ibrahim's advance.

1839.—Méhémet-Ali rebels again. Ibrahim conquers Syria, defeats Turks at Nezib, and threatens Constantinople. Europe interferes, compels Méhémet-Ali to give up Syria, but (1841) he is recognized Viceroy for life with succession to eldest male of his family.

1841.—Establishment of his dynasty guaranteed by Turkey, England, France, Russia, Austria, and Prussia. Egypt remains a vassal of the Porte, pays tribute, and furnishes contingent in war.

1846.—Catholic mission founded at Khartoum under protection of Austria.

1848.—Méhémet-Ali becomes insane. Ibrahim-Pasha regent.

1849.—Méhémet-Ali dies. Ibrahim also. Abbas his nephew succeeds him.

1854.—Abbas assassinated. Saïd-Pasha, third son of Méhémet-Ali, succeeds him.

1863.—Death of Saïd. Accession of Ismaïl-Pasha, son of Ibrahim.

1866.—By doubling the tribute he obtains the title of Khedive and change in order of succession to his eldest son, instead of eldest male, who is his uncle, Halim.

1869.—Opening of Suez Canal with fêtes costing $10,000,000. Sir Samuel Baker appointed Governor-General of Soudan.

1869-1878.—Numerous appointments of American officers in the Egyptian Army.

1874.—Gordon succeeds Sir S. Baker as Governor-General of Soudan.

1874, Oct.—Zobehr defeats and kills the Sultan of Darfour. Ismaïl-Pasha sends an army and completes the conquest and annexation of Darfour.

1875.—Gordon establishes garrisons in "equatorial provinces" up to the lakes. Zobehr summoned to Cairo, made a pasha, and held in gilded captivity.

1875, Oct. and Nov.—Commencement of Abyssinian war. Munzinger-Pasha, with 1,000 men, and Col. Arrendrup, with 2,500, entirely destroyed.

1876.—Egyptian army of 15,000 regulars, under Ratib-Pasha, defeated at battle of Gura Plains, March, 1876, by King John. Evacuate the country in May. Establishment of "mixed tribunals." Financial difficulties. Mr. Cave reports to British Government that Egypt equitably owes less than £45,000,000 of the £100,000,000 for which she had issued her bonds.

1877.—Ismaïl voluntarily appoints Commissioners of the Public Debt, English, French, and Italian. They gradually seize the entire administration and usurp Ismaïl's powers. Turco-Russian war. Ismaïl sends contingent of 20,000 men.

1878.—Rebellion of Zobehr-Pasha's sons at his instigation in the Soudan.

1879. Feb. 18.—Commissioners reduce the army. Emeute of 2,500 regular officers discharged penniless and refused the two years' back pay due them. They compel the Ministry to partial payment.

1879.—Ismaïl, exasperated by seeing himself and his country sacrificed for foreign bondholders, dismisses the Commissioners. They appeal to their governments (June 26), which obtain from the Sultan a firman deposing Ismaïl. Tewfik succeeds him.

End of 1879.—Gordon resigns and Raouf-Pasha succeeds him as Governor-General of Soudan.

1881, Feb. 2.—Achmed-el-Arabi, Col. 4th Infantry, and three other colonels protest against promotions of Circassians over their heads. Sent to citadel in arrest. Their regiments rise in arms, rescue them, and compel dismissal of Minister of War.

1881, July.—Mohammed Achmed proclaims himself the expected Mahdi.

1881, Aug. 10.—He defeats the force sent by Raouf-Pasha to suppress him.

1881, Sept. 9.—The Ministry being about to disperse the mutinous regiments at Cairo, Arabi surrounds the Khedive's palace with 4,000 men, demands dismissal of Ministry, a constitution, and a parliament. Sherif-Pasha appointed Prime-Minister.

1881, Dec. 8.—Reshid-Bey with 1,500 men defeated and killed by the Mahdi in Sennaar.

1881, Dec. 26.—Assembly of Notables convene, announce a just and equitable plan of constitutional government, and guarantee payment of public debt and its interest.

1881, Dec.—Plan rejected by England and France. Ministerial crisis.

1882, Feb. 3.—Sherif-Pasha resigns (Feb. 5th). Arabi Minister of War.

1882, Feb. 23.—Raouf-Pasha recalled; Giegler acting Gov.-Gen'l of Soudan.

1882, March 15.—Yusuf-Pasha leaves Khartoum with 5,000 men to attack the Mahdi.

1882, April 11.—Trial of Circassian officers for conspiracy to murder Arabi. Ministry convoke Assembly of Notables without Khedive's consent.

1882, May 6.—Sennaar hard pressed by rebels, who are finally defeated with great loss.

1882, May 12.—Abd-el-Kader-Pasha, the new Governor-General, reaches Khartoum.

1882, May 20.—English and French squadrons repair to Alexandria to overawe the people. Their presence produces intense irritation.

1882, May 25.—England and France demand Arabi's banishment. Refused by the Ministry.

1882, June 11.—Massacre at Alexandria. 150 Europeans and 700 natives killed and wounded.

1882, June 13.—News reaches Khartoum of Yusuf-Pasha's total destruction at Jebel Gedir.

1882, June 24.—The Mahdi repulsed at Bara (Kordofan), with loss of 3,000.

1882, July 11.—Bombardment of Alexandria by the British fleet.

1882, July 23.—Arabi proclaimed a rebel by the Khedive.

1882, Aug.—Sir Arch. Alison occupies Alexandria with 6,000 British troops.

1882, Aug. 15.—Lord Wolseley arrives and takes command. About 30,000 British in Egypt.

1882, Aug. 24.—British seize Suez Canal and make it their base, in spite of pledges to respect its neutrality given to de Lesseps, which had kept Arabi from destroying it.

1882, Aug. 28.—Amr-el-Makashef attacks Duem, and is repulsed with loss of 3,000.

1882, Sept. 8–14.—The Mahdi makes three assaults on El Obeïd. Defeated; loss 15,000.

1882, Sept. 9.—British captured advance post at Kassassin.

1882, Sept. 12–13.—Battle of Tel-el-Kebir. Total defeat of Arabi's army.

1882, Sept. 15.—Cairo occupied by British. Arabi surrenders.

1882, Sept. 25.—Khedive re-enters Cairo. Sherif Prime-Minister.

1882, Dec. 10.—Some of Arabi's disaffected regiments sent to the Soudan.

1882, Dec. 15.—Lt.-Col. O. H. Stewart (11th Hussars) reaches Khartoum and reports situation to British Government.

1883, Jan. 5, 17.—The Mahdi captures Bara. El Obeïd, reduced to starvation, surrenders to the Mahdi, and the garrison join his ranks.

1883, Feb. 20, 24, and 27.—Abd-el-Kader defeats the rebels in three engagements.

1883, March 10.—General Hicks arrives at Khartoum.

1883, March 22.—Abd-el-Kader defeats the rebels at Karkodj.

1883, March 26.—He is recalled to Cairo and superseded by Allah-ed-Deen.

1883, April 29.—Hicks-Pasha defeats rebels at Marabia (Sennaar). Achmed-el-Makashef killed.

1883, May.—Hicks-Pasha defeats the Mahdi near Khartoum and at Jebel-Aïn, and drives him back to Kordofan.

1883, Aug. 13.—Osman-Digma attacks Suakim, and is repulsed with loss.

1883, Aug. 20.—Hicks-Pasha supersedes Suleiman as Commander-in-Chief in Soudan.
1883, Sept. 8.—He leaves Khartoum with 11,000 men to recapture El Obeïd.
1883, Nov. 1–4.—Is exterminated with all his force at Kashgill.
1883, Nov. 6.—Consul Moncrieff, with Egyptian force, destroyed at Tokar.
1883, Nov. 9.—Gladstone's speech at Guildhall, announcing partial evacuation of Egypt.
1883. Nov. 20.—News of the disasters reaches London.
1883, 26–30.—Suakim attacked by Osman-Digma. British Ministry order Tewfik to abandon Soudan and Nubia to 1st cataract.
1883, Dec. 2.—Seven hundred Egyptian troops destroyed near Suakim; only fifty escape.
1883, Dec. 18.—Baker-Pasha leaves Cairo for Suakim with a motley force of 4,000.
1883, Dec. 26.—Turkey notified that her intervention will be allowed in Soudan.
1884, Jan. 8.—Sherif's Ministry resign rather than abandon Soudan. Nubar-Pasha, Prime-Minister.
1884, Jan. 18.—Gordon leaves London. (24) Reaches Cairo, and leaves next day for Khartoum.
1884, Feb. 4.—Baker defeated at Tokar, with loss of 2,500.
1884, Feb. 10.—Suakim attacked. Defended by British gun-boats. Admiral Hewett, Governor.
1884, Feb. 11.—Fall of Sinkat. Tewfik-Bey and garrison die fighting to the last.
1884, Feb. 18.—Gordon reaches Khartoum and is warmly received.
1884, Feb. 19.—Sir Gerald Graham sails from Suez for Suakim with 5,000 men.
1884, Feb. 21.—Tokar captured by Osman-Digma.
1884, Feb. 29.—Battle of Teb. Graham defeats Osman-Digma with great slaughter.
1884, March 2.—Graham re-takes Tokar. (5) Returns to Suakim with all his force.
1884, March 8.—Earl Granville notifies Sir Ev. Baring that Egyptian frontier must be at 1st cataract.
1884, March 13.—Battle of Tamaï. 2d Brigade broken and guns lost and recaptured. British loss, 180: rebels, 2,000.
1884, March 16.—Gordon attacked at Khartoum.
1884, March 21.—Makes sortie, and is repulsed at Halfiyeh by treachery of two pashas.
1884, March 24.—Terrible march of British towards Tamanieb. One half prostrated by heat.
1884, March 27.—Tamanieb wells occupied and Osman-Digma's camp burnt.
1884, March 29.—Sir Herbert Stewart with cavalry force pushes on to Handoub wells.
1884, March 30.—Returns exhausted. All Graham's army return to Suakim.
1884, April 1.—Graham re-embarks for Suez with all his force.
1884, April 2.—Osman-Digma captures many cattle and 1,000 sheep within one mile of Suakim.
1884, April 5.—General Stephenson and Sir E. Baring ordered to report on Korosko, Suakim, and Nile routes.

1884, April 8.—Gordon telegraphs that he has supplies for five months.
1884, April 16.—Consul Power reports Khartoum blockaded north, east, and west.
1884, April 20.—Refugees sent for safety from Khartoum intercepted at Shendy; 450 soldiers and 1,500 people massacred.
1884, April 30.—Admiral Hewett interviews King John at Adowa. Gordon sends indignant dispatches to Sir E. Baring, charging abandonment.
1884, May 8.—River route adopted for rescuing expedition. Camel depot ordered formed at Assouan.
1884, May 12.—Mr. Gladstone's declaration that the Mahdi is fighting for freedom and should not be put down. England withdraws proposition to Turkey to send her troops to Soudan.
1884, May 26.—Berber captured. The garrison and 2,000 people massacred.
1884, May 27.—El-Fascher, capital of Darfour, captured by the rebels.
1884, June 1.—River route abandoned. Suakim-Berber route decided on.
1884, June 14.—Admiral Hewett reports King John willing to furnish troops.
1884, June 16.—Engineer troops sent to Suakim to survey route.
1884, June 30.—Mudir of Dongola defeats 13,000 rebels.
1884, July 19.—Railroad plant and iron-clad cars sent to Suakim.
1884, Aug. 18.—Suakim route abandoned. Railroad plant shipped to India. River route finally adopted.
1884, Aug. 31.—General Lord Wolseley sails from England. (Sept. 9) Reaches Cairo.
1884, Sept. 15.—Gordon shells and destroys Berber. (18) Col. Stewart, Consuls Power and Herbin, with a number of refugees, wrecked at fourth cataract and massacred.
1884, Sept. 26.—Camel corps leave England. (Oct. 5) Wolseley at Wady Halfa. (6) Gordon shells Shendy and other towns. (28) 6,000 British troops south of Sioot.
1884, Nov. 3.—Wolseley reaches Dongola. (15) 800 whale-boats reach Wady Halfa and start (Nov. 19) with 3,000 troops up the Nile; 6,000 more on the way between first and second cataracts.
1884, Dec. 6.—Sir Herbert Stewart with 1,000 men pushes forward from Dongola to Ambukol.
1884, Dec. 13.—Wolseley reaches Debbé. (16) Joins Stewart at Korti.
1884, Dec. 25.—10,000 British troops between second cataract and Korti (30) Stewart starts with 1,150 men and 2,000 camels for Gakdul. (Jan. 2, 1885) Occupies Gakdul wells. (3) Returns alone to Korti.
1885, Jan. 5.—General Earle sent up the Nile towards Abou-Hamed with 2,400 men.
1885, Jan. 8.—Stewart starts back from Korti with 1,500 more men and as many camels.
1885, Jan. 10.—Burnaby leaves Korti with a supply train for Stewart at Gakdul.
1885, Jan. 13.—Omdurman captured.
1885, Jan. 17.—Battle of Abou-Klea wells. Burnaby killed.
1885, Jan. 18.—Gordon makes unsuccessful sortie.
1885, Jan. 19.—Battle of Shebacat wells (or Gubat). Stewart mortally wounded.

1885, Jan. 21.—Four of Gordon's steamers arrive at Gubat. (22 and 23) Sir Charles Wilson shells villages. (24) Starts up the Nile for Khartoum with two steamers.

1885, Jan. 24.—Earle's column leaves Homdab for Abou-Hamed.

1885, Jan. 26.—Khartoum captured and Gordon killed. About 4,000 slaughtered.

1885, Jan. 28.—Sir C. Wilson finds Khartoum in possession of the enemy and turns back.

1885, Jan. 29.—One steamer wrecked. (31) The other also. He takes refuge on an island.

1885, Feb. 1–2.—Gallantly rescued by Lord Charles Beresford on another steamer from Gubat.

1885, Feb. 8.—Wolseley directed from London to capture Berber at all hazards.

1885, Feb. 10.—Sir Redvers Buller reaches Gubat with reinforcements. 2,600 men there.

1885, Feb. 10.—Battle of Birti or Kirbekan. General Earle killed. Brackenbury in command.

1885, Feb. 11.—West Kent Regiment leave Korti for Gubat.

1885, Feb. 12.—Sir Gerald Graham assigned to command of Suakim expedition. Railroad to be laid "at once!"

1885, Feb. 14.—Sir Redvers Buller evacuates Gubat after disabling remaining steamers.

1885, Feb. 16.—Sir Herbert Stewart dies and is buried at Gakdul wells.

1885, Feb. 19.—Sir R. Buller ordered to concentrate at Korti.

1885, Feb. 19.—Departure of the Guards from London for Suakim.

1885, Feb. 20–25.—Buller's difficult retreat to Korti.

1885, Feb. 25.—Brackenbury crosses his force to east bank and same day receives orders to concentrate at Korti, and crosses back.

1885, Feb. 28.—Contract made for pipe-line for Suakim route.

1885, March 2.—Wolseley announces purpose to hold Korti-Gakdul route.

1885, March 9.—All his force concentrated at Korti.

1885, March 10.—Grenadier and Coldstream Guards (General Freemantle) reach Suakim.

1885, March 15.—Zobehr-Pasha and his two sons arrested for treason and incarcerated at Gibraltar.

1885, March 20.—Wolseley retires from Korti to Dongola and gradually to second cataract during April and May.

1885, March 20.—Battle at Hasheen. Graham defeats Osman-Digma and returns to Suakim.

1885, March 22.—Second battle at Hasheen and return to Suakim.

1885, March 28.—Graham advances to McNeil's zeriba. Two miles' advance in two weeks.

1885, April 1.—Finds Tamaï wells evacuated. Burns Osman-Digma's camp and returns to Suakim.

1885, April.—Railroad project abandoned. Plant sent back to England. Another Mahdi appears in Kordofan.

1885, May 7.—Wolseley goes through Cairo and Suez to Suakim, reviews Graham's army, and returns to Cairo.

1885, May 5–20.—Graham re-embarks with his army and returns to Alexandria.

1885, June 21.—The Mahdi dies in Kordofan. Abd-Allah Kalif succeeds him.

1885, July.—Wolseley returns to England. Lt.-Gen. Stephenson left in command of all British forces in Egypt.

1885, Dec. 30.—Sir R. Buller attacks and defeats rebels at Ghinnis, above Wady Halfa.

1886.—British forces withdrawn, leaving two regiments at first cataract.

REPLY TO CRITICISMS UPON "THE VOYAGE OF THE VEGA AROUND ASIA AND EUROPE."

Read to the Swedish Society of Anthropology and Geography,

BY

A. E. NORDENSKIÖLD.

Translated by VERE A. ELFWING.

When the voyage of the "Vega" around Asia and Europe was ended, I thought it a duty incumbent upon me to describe in a work, intended for the public at large, the exploring tour that all over Europe as well as in the East had been received with such great enthusiasm. The main subject of this work was to be, of course, a description of the voyage itself, of the nature of the northern coast of Siberia, of the animal and plant life there in existence, and of the tribes with which we met during the voyage. But as I have mentioned in the preface, I wished also to draw up such a complete review, as space would permit, of preceding exploring voyages to the northern coast of Asia. "In the description of the voyage of the 'Vega' it would have been too great an ingratitude if a few words had not been devoted to the predecessors who, through numberless vicissitudes and hardships, and often with sacrifice of life and health, had cleared the way for us and made possible the victory we have won." *

In composing this historical review, I looked upon my-

* The preface to "The Voyage of the Vega around Asia and Europe."

self as an umpire who acts dishonestly if he does not confer the prize according to his best judgment, independent of the accepted social or scientific rank of the champions, independent of the lamentable national prejudice running through the great majority of works on the history of geography, and of which I could give a great many very significant instances, pitiful at once and comical. As umpire I must have made mistakes, but, I have honestly tried to find the truth, and I am convinced that the day will come when the author of "The Voyage of the Vega" will have due recognition, also, in this respect. But this view of my duty as author has occasioned some dissenting judgments, which on their part have brought down upon me various censures.

The first of these appeared in a special criticism upon "The Voyage of the Vega," by my esteemed friend, the celebrated Petersburg academician and Siberian explorer, Fr. Schmidt, published partly in "Beiträge zur Kenntniss des Russischen Reiches und der angränzenden Länder Asiens, zweite Folge," and partly as a separate pamphlet entitled "Einige Bemerkungen zu Prof. A. v. Nordenskiölds Reisewerk: Die Umsegelung Asiens und Europas auf der Vega, 1878–1880, mit besonderer Beziehung auf die Geschichte der Russischen Entdeckungsreisen im Sibirischen Eismeer, St. Petersburg, 1883," and read to the Academy of Sciences in St. Petersburg, May 24, 1883.

The pamphlet, I hasten to say, is written in a strain particularly friendly to "The Voyage of the Vega," and in a style becoming the celebrated scholar. Its publication seems to have been called forth by the fact that with the geographers Chavanne, Petermann, and Linde-

man, I maintained, as to the name "Wrangel's Land," given to the large island in the Siberian Sea, about 71° N. lat. and 180° E. long., that although the existence of land in those parts had been persistently asserted by hunters and Cossacks sent out on exploring voyages in the last century, Wrangel * always appeared very skeptical with regard to the matter. As a preceding author has said the land had thus got its name according to the old saying: "lucus a non lucendo." † That the meritorious deeds of Wrangel as a polar traveller have been properly set forth by me in other respects is admitted by Schmidt, who seems to think my representation censurable only on this special point. The remarks concerning Wrangel's Land which I have made or rather repeated, do not, of course, signify any desire of mine to object in any way to the name itself. It is a custom of long usage to name new lands, seas, and isles after persons who never have visited the part of the world where they are situated, nor dreamt of their existence.

I will not add any thing to the literature already too extended, about a question of such small importance as to whether Wrangel did or did not believe in a land he had not visited. The question has been examined from various points of view in works by v. Baer, Helmersen, Schmidt, Stieda, and others of Wrangel's countrymen. But I hope that my learned friend Schmidt will allow that a text, which in a question so simple has given rise

* The name is written in this manner by Wrangel himself, or at least in the first German edition of the description of the voyage; also, in the edition that the daughter of Wrangel, Baroness v. Engelhardt, has had published (printed at Leipzig, 1885). Baer, Helmersen, Schmidt. Stieda writes it *Wrangell.*

† To avoid differences I refer to either Schmidt's pamphlet or to "The Voyage of the Vega," where the passages may be found by aid of the complete index.

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to such different conceptions, must be somewhat obscure, at least, so far as concerns the German edition of Wrangel's travels, which is printed in the mother tongue of the traveller, and has probably been used exclusively by West European scholars. In one respect, however, I must protest against the whole literature of this question and defend Wrangel. Whether Wrangel believed or did not believe in the shadowy legends about Wrangel's Land, collected by him in such a very meritorious manner, has scarcely any thing more to do with his importance as an explorer, than has the religious creed he professed.

I have a right to express myself as I have done here, for I have looked with the utmost indifference on a similar question of priority, touching the Swedish exploring voyages. During the voyages of Torell in 1858 and 1861, some of the hunters, by whose experience in sailing and hunting in the polar sea we endeavored to profit, told us that they had seen, at some distance, a very high and mountainous land east of Spitzbergen. Others, again, declared that this whole story arose from a mistake. During the voyage of 1864 I and the professor Dunér, from the top of a snow peak one thousand feet high, which we called "White Mountain," situated in the interior of Storefjord at 78° 45′ N. lat., had occasion to see and to sketch this land and to take a bearing of it with a theodolite. To indicate the land on a map accompanying a dissertation, "Notes on the Geography of Spitzbergen, by N. Dunér and A. E. Nordenskiöld," published in vol. vi. of the Sw. Academy of Sciences (1865), I made use of a name (Giles Land) which is given in old maps to a land situated in about the same region. This name Petermann, rightly or wrongly, afterwards rejected. A sketch of the land

was given in the description of the voyage in the year 1864.*

When v. Heuglin in 1870 visited Spitzbergen, he fancied that he saw east of Spitzbergen a vast land between 78° and 79° N. lat., and 28′ long. east of Greenwich. This he called "König Carl's Land." The discovery by the Norwegian hunters, as well as by the Swedish explorers, was, at first, totally overlooked. Afterwards, the land, seen by us, was declared to be a "foreland" of no significance, and it was indicated, just as if by special grace, by the name of the "Schwedisches Vorland." If I recollect correctly, this led only, on my side, to a brief remark in a letter to Petermann, objecting to the extension v. Heuglin had given to the land, and a contradiction from some English geographers as to the supposed attempt of the German geographer to claim for himself the honor of the discovery of a land discovered in the year 1625 by Wiche, and shown for the first time on a map of Spitzbergen, accompanying a dissertation by Thomas Edge, published in 1625 in the third volume of Purchas, pag. 462–472.† This latter part of the discussion was, however, concluded, after a vehement reply from Petermann, ‡ when Norwegian hunters, who had gone ashore on the land and had circumnavigated it, discovered that south and north its extension had been *quite correctly indicated*

* *Swedish Expeditions to Spitzbergen and Jan Mayen*, undertaken in the years 1863 and 1864, by N. Dunér, A. J. Malmgren, A. E. Nordenskiöld, and August Quennerstedt, Stockholm, 1867, p. 152.

† The frequently quoted map of Pellham, of the year 1631, is only a later reprint of the plate used for Purchas' work. This map is, however, often spoken of as an original, for instance in the works of the Hakluyt Society (A. White, *Spitzbergen and Greenland*, 1855), and in the article in Petermann, referred to in note 6.

‡ [Note 6.]—Compare Petermann's Mittheilungen, 1873, p. 129; Proc. of the Royal Geographical Society, vol. xvii., 1873, p. 97.

by Dunér and myself, and that consequently the part of the land which on the map above mentioned is called Wiche's land did not exist at all.

The following table shows how great an analogy existed between the tale of the discovery of King Carl's Land and that of Wrangel's Land:

WRANGEL'S LAND.	KING CARL'S LAND.
Land is indicated in old maps just about where Wrangel's Land lies.	Land is indicated in old maps just about where King Carl's Land lies.
In more recent times indications of its existence were gathered from statements of Russian hunters and natives on the Siberian coast, that they had observed the land from a distance.	In more recent times its existence seemed to be confirmed by narratives of Norwegian hunters, who had seen the land from a distance.
Wrangel gathered those statements and made them public.	Dunér and Nordenskiöld gathered those statements and made them public, after having taken a bearing and sketched the land from the top of a mountain.
In the year 1849 Kellet thought that he saw a part of "Wrangel's Land," "but whether he was simply mistaken remains undecided" (Schmidt, p. 126).	In the year 1870 v. Heuglin thought he saw from the firth of Walter Thymen a part of King Carl's Land, but it has now been decided that he was mistaken.
The land was circumnavigated, and was in 1881 visited and mapped out by the American officers Waring and Hunt.	The land was circumnavigated, and was visited and mapped out in 1872 by the Norwegian whalers, Captains Nielsen, Altmann, and Johnsen.
Wrangel's Land has an extension from east to west of 70′, and a breadth of scarcely 40′.*	King Carl's Land has an extension from east to west of 70′, and a breadth of about 40′.*

As is seen, the tale of discovery of both countries is absolutely identical. Nevertheless, it has not occurred to any Swede to write long pamphlets and arguments to affirm the right of Swedish explorers to the discovery of the new land—a right of discovery that must, in my opinion, be awarded, in the first place, to the English or

* According to maps in Petermann's Mittheilungen, 1873, Tafel 7, and 1882, Tafel 2.

Norwegian hunters, who had seen it earlier than the year 1864. We ought not to overlook the fact that the Swedish polar exploration, projected in 1864, in order not to die out for want of encouragement from the public, needed only too much every word that could be said in its favor. The public was scarcely able to estimate the important scientific results already won in the Torell expeditions, and at that period we had not, as yet, recorded as our own these achievements: the farthest advance to the northward with a vessel *in the Eastern Hemisphere* (1868); the only attempt ever made late in autumn (Oct., 1868) from 80° N. lat. to sail towards the Pole, an attempt that ought to be tried once more in a good ship; the doing away with a preconception which had for so long a time prevented explorers from pressing forward in the Greenland ice desert (1870); one of the earliest trials to pass the winter at 80° N. lat. (1872–73) *; the first successful voyage in a vessel to the mouth of the Yenisei (1875); the earliest advance in a vessel from the Atlantic Ocean towards the Lena (1878) †; the voyage in the "Vega" around Asia and Europe (1878–1879); the penetration to the heart of the Greenland ice desert (1883); and the first breaking through the ice-belt on the eastern coast of Greenland, south of the polar circle, undertaken in a vessel in recent times (1883).

* When the Swedish expedition in 1872 took up its winter quarters at Mossel Bay (79° 53′ N. lat.) it was not known *to us* that any man had ever before wintered at so high a northern latitude; but in 1871–2, Hall had wintered at 81° 38′ N. lat., and Weyprecht and Payer passed the winter in the same year as ourselves at Franz Joseph's Land at 79° 51′. Since then, several others have wintered in more northern latitudes.

† The steamer "Lena" was ordered, equipped, and manned by me, and served as a tender to the "Vega" up to the time of our separation outside of the mouth of the Lena River.

Further on the academician Schmidt, after approving of the manner in which I have described the voyages undertaken by Scandinavians, Englishmen, and Dutchmen up to the middle of the seventeenth century, and those of Norwegian whalers and hunters during the decade before the voyage of the "Vega," says of my remarks on the Russian voyages in the icy sea: "Here it strikes us that, in the endeavor to leave to each one his own, the less known contributors to the widening of our knowledge, men whose merits we are not disposed to judge, seem to have been put forward, I might almost say, at the cost of our distinguished explorers. Wrangell, for instance, and Baer have to suffer, in several places, assaults which we cannot hold to be justified. Even Lütke's 'Voyage to Novaja Semlia,' the scientific value of which can in no wise be denied, comes off poorly in comparison with the voyages of Pachtussow, Ziwolka, and others, because, forsooth, he went no farther than his predecessors."

This remark is quite justified, because the historical part of "The Voyage of the Vega" aimed only at describing the development of our geographical (not our chorographical or topographical) knowledge of the route the "Vega" followed. It was certainly my purpose to draw up in a chapter of "The Voyage of the Vega" a review of the works of the great explorers to whom is due the knowledge we have in the present day about the nature of the polar regions of the old world, even when this touches upon questions foreign to the explorations in progress during my voyage. This would have brought in, as regards Russian explorers, works by Pallas, Gmelin, Baer, Middendorff, Schmidt, and others. It soon became

evident, however, that such a section would have exceeded the space allowed to the description of the voyage, and would have taken a longer time to write than I was able to devote to the subject. Besides, I then entertained a hope to be once more able to participate, in person, in a scientific expedition to the Siberian tundras, and in such a case I should have been enabled to discuss this interesting chapter in the history of geography. What I had prepared, therefore, was laid aside for another occasion.

On a proper review of the facts, the rebuke of the Academician Schmidt is not justified.

Lütke was a great sailor. He made a circumnavigation of the world in a manner which has been justly praised, and he was an excellent officer, both in the marine and in the civil service; and I suppose he was also an excellent governor to the Grand Duke whose education was entrusted to his supervision. But in his voyages to Novaja Semlia in his carefully furnished man-of-war he never reached as far as the hunters in their withe-woven lodjas. He determined, with the accuracy customary in the topographical work of our great neighbor in the East, the capes projecting on the western coast of Novaja Semlia, but that this coast was surveyed by Lütke, as Mr. Schmidt maintains, cannot be true, for in his four journeys he did not go ashore there more than twice, so far as I can find out from the description of his voyages, and both times from the Matotschkin Strait; and an accurate map like the one we have of the western coast of Novaja Semlia—cut through, as it is, by rivers—cannot be founded only on measurements taken from vessels sailing along the shore. For the main survey of the western coast we no doubt have to thank the aforesaid hunters,

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or, it may be, some surveyors unknown to me. The eastern shore, again, was surveyed by Pachtussow, and I presume that even ultra-Chauvinists on the other side of the Baltic will be satisfied with the expressions I have used to point out his merits as an Arctic voyager. When I venture in this manner to question whether Lütke took any important personal part in the survey of Novaja Semlia, I may, on the other hand, be permitted to point out a merit in him which, as far as my knowledge goes, has not heretofore been duly represented—I mean the reverence with which he, throughout the description of his voyage to Novaja Semlia, has retained the old, and often historically important, and picturesque names.

Except as to the question whether Wrangel did or did not put any faith in the existence of the land that now bears his name, even Schmidt himself seems disposed to admit that I have done Wrangel justice when speaking of him, if also without any flourish. His works have always impressed me favorably, and what he has written upon Arctic questions I have always found displays a knowledge of the subject and a clear judgment untrammelled by preconceptions.

But—I cannot help it—such is not my opinion concerning certain portions of the work of von Baer. When a young student, I accompanied this eminent explorer on a voyage to Aland, and like everybody else who has come in contact with him, I learned to appreciate him highly as a noble, liberal-minded, and brilliant man. In later times I have often admired his style, still in old age so youthfully fresh and so rich in new ideas. But, nevertheless, and although von Baer has personally visited Novaja Semlia, it seems to me as if several works by him

on the Arctic regions bear such evident marks of having been written by one whose Arctic voyages were made in his library, that they fail to satisfy those intimate by long experience not only with the tempest, the mist, the ice, the snow, and the cold of the polar winters, but also with the brief sunshine of the polar summer, with its refreshing, delicious air, its varied animal life, and the sudden bloom of its flowers.

Regarding the travels of Anjou, I tried in vain to gather any information from the literature within my reach. Hence the summary way in which I have treated his travels. I trust that future historians of the deeds of Russian Arctic explorers will feel indebted to me for having saved from destruction the figure of the man who surveyed the New Siberian islands in such an admirable manner.

Furthermore, it would seem as if the academician Schmidt did not approve of the selection of wood engravings in "The Voyage of the Vega," representing the portraits of earlier voyagers in the sea between North Cape and Bering's Strait. There are several, indeed, that ought to have been embraced in this picture-gallery now missing, in consequence of the fact that it was impossible to get trustworthy originals. For the portraits of Barents and Bering, for instance, I not only sought in the libraries of Sweden, but had also researches made in Amsterdam, Copenhagen, and St. Petersburg, but in vain. Subsequently, however, and just by reason of these my inquiries, a beautifully engraved copper-plate portrait of Barents was found and reproduced in Holland. No portrait of Bering, on the other hand, is to be found. For reasons purely typographical I was also

obliged to cut down the number of illustrations. The men who investigated the nature of the Siberian tundras, as well as the explorers who went to Franz Joseph's Land and to the sea north of Bering's Strait, were left out as not directly coming within the scope of "The Voyage of the Vega." With these exceptions my picture-gallery includes the most prominent of those who aided in clearing the way for the "Vega"; the present time being more fully illustrated than the past, because it is more easy to procure the portraits of the men of our day. It is a cause of much regret to myself not to have an idea of the appearance of a Deschnew, Tscheljuskin, Hedenström, or Pachtussow. How indifferent the world has been on this subject is shown by the fact that the likeness of Sir Hugh Willoughby, which appears in "The Voyage of the Vega," is reproduced for the first time from an authentic original. And yet, even if he was not one of the founders of England's empire on the ocean, he was one of its first martyrs.

For the historical part of "The Voyage of the Vega" I was not, of course, able to make any researches in the archives, and the Russian literature pertaining to this topic was wellnigh inaccessible to me. As regards the works accessible in western countries, I have had, probably, more complete resources at my disposal than most of my predecessors. I have used them to the best of my ability, even if I have not been able to avoid an occasional mistake or an omission. My attention has been directed by the criticism of Schmidt to the fact that I have overlooked Rachmanin's voyages to the Kara Sea. This deficiency shall be supplied in a future and revised edition of "The Voyage of the Vega," should it be given to

me to bring one out. I shall be glad also if the opportunity offers to refer to the latest literature in regard to the survey of the northern point of Asia by Tscheljuskin, and to remark upon the fact that von Baer has withdrawn his accusation of lack of truthfulness against Tscheljuskin.

It remains only that I should express my thanks to the academician Schmidt for the courteous tone and style of his criticisms. This commendation I cannot bestow upon the two younger scholars or explorers, whose works I will now briefly examine.

The first of them, a Norwegian, Mr. Stejneger, who visited Bering Island within a short time after the "Vega" expedition, and resided there for a period, has published, partly in the Norwegian periodical *Naturen* and partly in the *Deutsche Geographische Blätter*, several interesting notes upon his observations. In some of these very strong charges are made against some of my statements in the reports of the "Vega's" visit to the island. The main cause of the sharp tone assumed by Mr. Stejneger seems to be that in my first report I stated, from information obtained on the island, that the number of sea-bears annually killed amounted to from 50,000 to 100,000, instead of 20,000 to 50,000, as the official returns declared. This statement of mine, I am very sorry to learn, is said to have occasioned various misunderstandings between the Siberian authorities and the Alaska Commercial Company. These, I may hope, have been set right by the correction made in the Swedish edition of the "Voyage," pp. 261–281, and this matter may be dismissed.

Mr. Stejneger objects to what I say on some other points, as for instance: that the factory on Bering Island was situated in a valley along the seashore; that the

white fox found on the isle has various colors; and that the sea-otter has been extirpated from several hunting grounds where it once appeared in great numbers. These comparatively small matters may be passed over: but the question raised by Mr. Stejneger as to the date of the extirpation of the sea-cow is one of the highest interest to science.

I gathered on this subject two notices of no mean value, as I think.

One of these intimated that a sea-cow had been seen by two men, still living at the time of my visit to Bering Island, as late as the year 1854; a story I very much doubted. However, on account of this narrative, I examined the men *separately* through an interpreter in the cabin of one of the natives, and without any assistance from the authorities, who, as experience has taught me, *if present at such transactions, have only a bewildering and confusing influence on the natives.* From those persons I got the statements published, and according to them it seems to me presumable that the animal in question was a sea-cow. Mr. Stejneger subsequently put those same men on examination, and he claims for his result a superiority over mine. *But with what right?* In the year 1879 I had for five and twenty years done the work of a detective in the service of science, and not always without success. I had spent a great part of my life among the hunters, and had familiarized myself with their train of ideas and ways of expression. I had also become intimate with the animal life in the Arctic seas. I sought for the truth, and had no need to offer a piece of sensational news.

Is Mr. Stejneger quite sure that his interrogations were

better and more naturally put than mine? We both played the part of public prosecutor and examined the same witnesses with the result of somewhat differing statements. I, for my part, consider a statement more worthy of credit if given before the thoughts and opinions of the witness have been bewildered through too long a cross-examination. Furthermore, a cross-examination is not the correct method to find out the truth from a half-savage hunter, who is generally a person very sparing of his words. I therefore prefer the story as I heard it, and it seems probable that the animal in question really was a sea-cow, which answers in a remarkable way to the description given by Stejneger. I admit, however, that we cannot be sure of this, for, with regard to animals fancied to have been seen by some one, science has registered too many mistakes. At the same time it cannot very well be supposed that in a sea so rarely visited in the last century as the northern part of the Pacific Ocean, the last specimen of the genus *Rhytina* should have been slain by the harpoon of the hunter. I even imagine that the hardly accessible coasts of Bering and Copper islands have been very rarely visited by hunters since Steller's day, 1741.

While staying on Bering Island I learned also, that an old man declared that in his father's lifetime sea-cows had been killed there. This man was questioned and I quote from "The Voyage of the Vega" (ii., p. 277), what was learned from him:

"A creole (i. e. descendant of a Russian and an Aleut) who was sixty-seven years old, intelligent and with his mental faculties unimpaired, related that his father, who died in 1847 at the age of eighty-eight years, had come

from Volhynia to Bering Island when he was eighteen years old, i. e. in the year 1777. During the first two or three years of his residence, i. e. till the year 1779 or 1780, sea cows were killed there, while they were feeding on sea weed at low tide. Nothing more than the heart was eaten, and the skin was used for *bajdars*.* In consequence of its thickness it was split in two parts, and the pieces thus obtained made one bajdar, 20 feet long, 7½ feet broad, and 3 feet deep. After this time (1779 or 1780) no sea cow had been killed."

Here, also, I tried to the best of my ability to find out the truth. I made it especially my business to clear up the old man's chronology. This was certainly somewhat complicated, and it is possible that Mr. Stejneger is correct when he names 1772 as the year of the father's arrival at the island, and, accordingly, 1774 or 1775, as the year when the last sea-cow was killed. But to reject the old man's tale entirely would be going too far. Hunters have generally experienced too many adventures to need to resort to fictions, like a Sunday sportsman, and in this case there is not the least reason to call the man's veracity in question. The fact is, therefore, that in the year 1879 there was still living a man on Bering Island who had heard from his father, deceased thirty years before, that sea-cows had been killed for the last time on the island during his youth, and that the date of this event, arrived at by inquiry into statements with regard to age and years, may be fixed, according to the figures I obtained, at the year 1779 or 1780, or, according to Stejneger, in 1775. The difference may be of slight importance to science, but the notice itself is of interest, *because it is the only positive*

* Native boats.

statement we have of the date when a sea-cow was killed for the last time on Bering Island. There is no warrant, whatever, for the year 1768, so much written about and gathered from Sauer's description of Billings' voyage.

Sauer's notice may be read (in the description of the island of Kadiak and its inhabitants), p. 181. "*An account of a geographical and astronomical expedition to the northern parts of Russia . . . performed . . . by Commodore Joseph Billings in the years 1785 to 1794 . . . the whole narrated from the original papers, by Martin Sauer, secretary of the expedition,* London, 1802," and completely copied reads as follows: "Sea cows were very numerous about the coast of Kamtschatka and the Aleutian islands, at the time when they were first discovered; but the last of the species was killed on Bering Island, and none have been seen since."

The work in question was published eight years after Billings' voyage was ended, and twelve years after the voyage to Kadiak, in the description of which the famous year 1768 is given. To judge from the narrative of the voyage, Sauer himself seems not to have been on Bering Island, and the notice is given, by the way, without naming its source and without any intimation from the author as to the importance that should be attributed to the statement. Sauer, himself, says in his preface that he has had access to a copy of the ship's journal (where, of course, no remarks of the kind here in question were to be found), but that his notes, otherwise, were so very incomplete that he was often obliged to trust to his memory. Finally, the notice is, so far, absolutely erroneous, since at Kamtschatka and the *principal* Aleutian islands the *Rhytina* has never been found, so far as our knowl-

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edge goes, since the Russians discovered those regions. For further particulars about the *Rhytina* I have to refer to what is said in "The Voyage of the Vega," about the meeting of the hunters with this remarkable animal. As to Brandt's description of the extirpation story of the *Rhytina*, in *Symbolæ sirenologicæ* (Mém. de l'Académie de St. Pétersbourg, J. xii., No. 1, 1861–1868, p. 295), it is based upon a German translation of the "*Account of the Russian Discoveries between Asia and America*, by William Coxe, London, 1780." Coxe was, however, only a compiler and at second-hand. The statements in "The Voyage of the Vega," on the contrary, are based upon the very originals from which Coxe derived his information.* The large number of fragments of the skeleton of the *Rhytina*, brought together during the five days' stay of the "Vega" expedition on Bering Island, was distributed among the museums of Stockholm, Upsala, Gothenburg, and Lund. The principal part is in Stockholm, and among the remains there are even ear bones and one metacarpal

* As Coxe in his preface says, the part of his work which treats of the *Rhytina* is a translation of *Neue Nachrichten von denen neuentdeckten Inseln in der See zwischen Asien und America aus mitgetheilten Urkunden und Auszügen verfasst von J. L. S.*** (*Scheerer*), Hamburg und Leipzig, 1776. He decided to translate it first when the academician Müller, in St. Petersburg, had testified to the agreement of the work with the original papers. By comparing the works of Coxe and Scheerer, I have assured myself that Coxe's translation is not verbal, that it is incomplete and not wholly correct regarding the sea-cow. Here, then, we find this remarkable sequence that: 1. All older authors on the extirpation of the sea-cow base their narratives upon Brandt, after von Baer first reported the destruction. 2. Brandt bases his statements upon a German translation of Coxe. 3. Coxe's translation into English of Scheerer's German work is incomplete respecting this question. 4. Scheerer's work is a very deficient German revision of Russian original narratives, that have been kept and presumably are still kept in the archives of St. Petersburg. This is not the only instance in which I, while engaged upon the preliminary studies necessary for "The Voyage of the Vega," have been able to establish the fact that even prominent authors have, unwittingly, lent themselves to carrying on the game: "A report goes about."

bone. Besides the bones of the *Rhytina* a fragment of the skull of a species of smaller whale was brought home from Bering Island. This is described by Malm in the appendix to the Acts of the Royal Academy of Sciences, vol. 8, No. 4, under the name of Berardius Vega.

Finally, a Danish author, Mr. P. Lauridsen, after studies in St. Petersburg, has recently published in Denmark a work: "Vitus I. Bering og de russiske Opdagelsesrejser fra 1725–1743, Kjöbenhavn, 1885," in which appear various attacks on "The Voyage of the Vega," which seem to require some reply from me. To begin with, a determined protest. Immediately after the return of the "Vega" expedition, Mr. Lauridsen seems to have engaged in a controversy with Mr. Th. Fries and A. Stusberg regarding the meaning of the words "northeastern passage." I will not have any thing to do with this controversy, which at most relates only to this or that definition of the word in dispute; a definition for which it will be best to consult neither national sympathies nor antipathies, but only approved dictionaries and authors conversant with the subject.* I must protest in the most determined manner against Mr. Lauridsen, when he says: "If these assertions had not come from men, who themselves participated in

* The word *northeast passage* appears, as far as I have been able to find, for the first time, in the heading of a letter from Gerard Mercator to Richard Hakluyt, dated Duisburg, July 28, 1580, and printed in Hakluyt: "The Principal Navigations of the English Nation, etc." (1st ed., 1589, p. 483). In this very interesting letter Mercator, who unconditionally assumed that the northern border of Asia was accurately traced on the Agathodemonian maps, evidently means by "northeast passage" a sea route, leading from one ocean into the other, unimpeded by land or by ice. But Mercator suggests that up to the time when this trade route should be opened, goods might be carried from "Catai," Mangi, Mien, etc., to England by the way of the large Siberian rivers, commencing in China, and the large bay that is bounded on the east by the Promontorium Tabin and in the west by Novaja Semlia and Waigatsch Island.

XUM

the voyage of the "Vega," or were concerned with the Swedish Arctic explorations, and if they did not throw a characteristic light on Baron Nordenskiöld's own representation,I would not have mentioned them at all." With the historical popular writings on Arctic subjects, by my honored friends and former fellow-travellers, Th. Fries and A. Stusberg, I have nothing whatever to do. I do not make myself in the least responsible for their writings, and, to be sincere, with the utmost gratitude for the kindness shown to me, I rank them in the same category with several of Mr. Lauridsen's digressions—that is, outside of a thorough scientific investigation. Neither do I need to dwell upon Mr. Lauridsen's comments on my representation of the explorations of Wrangel, Baer, and Lütke, as the remarks he reproduces have already been replied to in my notice of the academician Schmidt.

When Mr. Lauridsen reproaches me for having confined myself to excerpts from Wrangel, he is entirely mistaken. As is frequently repeated in "The Voyage of the Vega," I have made much use of Wrangel, because he has in his work often availed himself of archives and documents, not in print, and not accessible to me; and because he himself had visited the regions, the exploration of which he describes, and what he says is not therefore obnoxious to reproach as the talk of a man shut up in his library. In the instances where he bases his statements upon older authors, accessible in the western literature,.such as Fisher, Müller, Pallas, Gmelin, and others, I have always consulted them at first hand. I have always quoted my authorities, and have never represented a quotation of a quotation as one taken from an original source, and in reference to the Siberian literature of travel I have

had access to a more complete library than most of my predecessors, save in one respect: I have not been able to consult the authors whose works are in Russian. The reason for this Mr. Lauridsen will know, if he peruses what he himself has so prudently written in his preface, and it is contained in the words—incomplete knowledge of the language. To this may be added, that the literature of travels in the Russian language was almost entirely unrepresented in Swedish libraries at the time when "The Voyage of the Vega" was written. Any researches in the archives, Mr. Lauridsen must also admit, could not have been required of the author of "The Voyage of the Vega."

When Mr. Lauridsen further says: "While Nordenskiöld lavishes pages upon pages upon the quite unimportant or wholly fictitious travels above Northern Norway by an Othere, an Ivanof, or a Martinière,* he despatches his Russian precursors . . . in a couple of not very well composed pages," his statement is so extraordinary that I can only account for it by supposing that he overlooked the thirteenth chapter in "The Voyage of the Vega," where the travels of my Russian precursors have been treated of to an extent scarcely ever allowed to

* Should a history, such as that given in "The Voyage of the Vega," of a voyage so important in a geographical as well as an ethnographical respect,—the first voyage undertaken round the northern cape of Asia,—be treated as unimportant? And are we to say the same thing of Rodivan Ivanof's wintering in the Kara Sea, one of the few notices we have of early voyages undertaken in that sea by the Russians, and especially instructive with regard to the animal life there, before the larger animals had been frightened away by a merciless hunt? The voyage of La Martinière, although to a considerable degree fictitious, has its significance in the unreasonably extensive way in which it has influenced the ideas of the public on Arctic matters. This will be all the better understood, when we reflect that this Munchausenism has been printed in 4 French, 6 German, 2 English, 2 Dutch, 1 Latin, and 1 Italian edition.

them in any publication outside of Russia, Mr. Lauridsen's own work "About the Russian explorations from 1725–43" not even excepted.

The historic part of "The Voyage of the Vega" occupies, in the Swedish edition, the following pages:

The earliest northeast voyages, Othere-Chancelor, i., pp. 44–65.

The history of the northeast voyages from 1556–1878, i., pp. 205–303.

The development of our knowledge of the northern coast of Asia, ii., pp. 151–218.

These make a total of 189 pages (the account of the discovery of Bering Island not included), and of these the Russian expeditions, and especially the great northern expedition, fill not "a couple of pages" but the main part. I cannot, therefore, be accused of slighting the works of my predecessors, and if Mr. Lauridsen, for the sake of certainty, and by aid of the index, will consult what I have said of Bering, he will be obliged to admit that I have fully displayed the merits of the great northern expedition and those of Bering. It is not for me to say whether I have been fortunate or unfortunate as an author, but I have had the love for my subject and a desire to find the truth.

In his work, which is rich in facts but not copious (and I say this in his praise), Mr. Lauridsen has devoted nearly two pages to showing that I am wrong in what I have said of Tscheljuskin: that "up to a recent date the statement that he really did reach the northern point of Asia was doubted." But I had certainly the right to say this. If a person in 1742 performed one of the heroic deeds of geography without having received any acknowledgment

for it in his lifetime, and if the best authorities in this person's own country a century later still considered him an impostor, I was surely justified in giving the above-quoted opinion in 1880, in spite of the fact that two eminent geographical authorities have withdrawn their charges. Moreover, is it really the case that Sokoloff's and von Baer's later writings made it impossible to revive the old charge? He who can assert this must be but slightly acquainted with the history of geography and with that of Siberian geography above all.*

I might end here, but the importance of Mr. Lauridsen's stake in the Bering literature forces me to add a few remarks, though outside of the main topic of this paper.

In the note, page 12, Mr. L. says: "Here and in the following the old style, twelve days behind our time, is always meant." The difference between old and new style in *the last century* is not twelve but eleven days. In indicating dates from Russian and older west European narratives of travels, and particularly for the northern regions, it would be desirable, in order to avoid mistakes, as I have observed in "The Voyage of the Vega," to give both styles: $\frac{21}{10}$ Jan., 1533; $\frac{12}{1}$ July, 1687; $\frac{23}{12}$ Dec., 1724; $\frac{12}{1}$ Aug., 1835. Eleven to twelve days earlier or later make a very essential difference in sailing in the polar seas. This year (1885), for instance, the southwestern part of the Kara Sea was blocked up by drifting ice on the 10th of August, but was open as far as to the Yenisei on the 22d.

* Previous to the departure of the "Vega" expedition from Sweden I received a letter from an unknown well-wisher to our voyage, cautioning me not to put too much faith in the Tscheljuskin exploration story, as the writer of the letter considered it fictitious.

The fac-simile of Barents' map of 1598, a reproduction published by Pontani in 1611, represented in vol. i., plate 5, in "The Voyage of the Vega," is of extraordinary interest as an original source of information on his third voyage, but there is not, as Mr. Lauridsen (page 14) seems to suppose, any thing original in it as to the delineation of the northern coast of Asia and the relative situation of Asia and America. In this respect Barents' chart is only a reproduction of older maps, which, with regard to the delineation of the northern coast of Asia, are based upon pre-Columbian suppositions; and these again rest upon the story told by Pliny the Elder in the "Historia Naturalis," L. vi., ch. 13 and 17, about the northern limit of the world known to him, while names of countries and of people are partly taken from Marco Polo.

That the map accompanying the first edition of Witsen's "Noord en Oost Tartarye" was drawn by Mercator cannot be true, at least if by Mercator is meant the famous geographer Gerard Mercator. He died forty-seven years before Witsen was born (1641). But Witsen reproduces, in the edition of 1705 (the edition of 1692 I have not seen), on page 966, a number of old maps, among others "Asia ex magna orbis terræ descriptione Gerardi Mercatoris desumpta, studio et industria G. M. iunioris edita Anno MDLXXXVII." This reproduction has, of course, nothing to do with Witsen's celebrated map of Northern Asia, published in 1687, of which I have only seen the copy, on a reduced scale, published by Adam Brand in the "Relation du Voyage de Mr. Evert Isbrand," Amsterdam, 1699. It would have been interesting to learn where Mr. Lauridsen had an opportunity of con-

sulting the first edition of Witsen's work. In such a monograph as Mr. Lauridsen's a quotation at second-hand ought never to occur without its being distinctly stated. Witsen's later conception of the cartography of North-eastern Asia is laid down in "Lant Kaarte, van't Oost-Tartarie Autore, N. Witsen, Reip. Amst., Senatore," and in "Nieuwe Lant-Kaarte der Tartars van Niuche, Auctore N. Witsen Con: Amst." These are wanting in my copy of the edition of 1705, but are found in Nieuwe Uitgraaf of 1785, *which is only a title-edition so-called, i. e., a new binding-up of the work, printed eighty years before, with a new title-page, several new plates, and a preface by P. Boddaert, dated Utrecht, Oct.* 13, 1784. The above-mentioned maps were evidently made in the latter part of the seventeenth century, and they bear witness to the difficulty all cartographers had in making the Russian notices of Siberia correspond with those of the western Europeans in China, Japan, and Northwestern America. These maps must not be confounded with a third modern map of Asia, attached to Boddaert's introduction to the title-edition of 1785. Of interest are the notices about the source or one of the sources from which the Dutch cartographers in the seventeenth century gathered their information about Russia. These notices were published by the librarian, H. Wieselgren, in "*Leibnitz' Letter to Sparfvenfeldt*, 1695–1700," Stockholm, 1883.*

All things considered, Mr. Lauridsen's excursion (p. 14 or 15) into the territory of Russian cartography is not successful. I will merely refer to Friedr. v. Adelung, *Über die älteren ausländischen Karten von Russland* (Beiträge zur Kenntniss des Russischen Reiches, iv., St.

* Ymer 1883, p. 266.

Petersburg, 1841, p. 1),* and H. Michow, *Die ältesten Karten von Russland* (Mittheilungen der Geographischen

* In the enumeration of older Russian maps by Adelung, several of great importance are missing. I will here only mention: Olai Magni, maps of 1539 and 1567 of Scandinavia, also including Northwestern Russia. The editions, printed at the end of the sixteenth or beginning of the seventeenth century, by Lucas Jansz Waghenaer's or Aurigarii Spieghel der Zeevaerdt van de navigatie der Westersche Zee (a general map, embracing, also, the peninsula of Kola and the western part of Russia; coast charts of the eastern side of the Baltic and Gulf of Finland); Linschoten's and Gerard de Veer's many and important original maps of Northern Russia from the same period; Jan Jansz' and Pieter Goos' sea charts from the middle of the century, containing numerous maps of the north coast of Russia; several editions of Ptolemæus, among which, for instance, the one published by Seb. Münster in Basel, 1540, which, among its *tabulæ novæ*, contains maps Nos. xiii., xv., and xix.) that embrace the whole Russian empire; the edition printed in Padua, 1621, containing copper-plate maps of great beauty, of European

Gesellschaft in Hamburg, 1882–83, p. 100). But here I will avail myself of the opportunity to correct a state-

ment in "The Voyage of the Vega," which represents Münster's map of 1544 to be the oldest printed map of

Russia (p. 163) and Northern Asia ("Tartariæ Imperium" p. 167); Joh: Janssonii, large atlas of the middle of the seventeenth century, with its numerous and detailed maps of different parts of the Russian empire of the present time, etc.

Russia, based upon actual modern observations. I have myself recently found an older map, hitherto overlooked, of which I give a fac-simile. This little map is surely very insignificant in appearance, but extremely remarkable through its correctness, *when compared with* a modern map. It is to be found as a wood-cut on page 48 of a work, the complete title of which is: *C. Julii Solini polyhistor, rerum toto orbe memorabilium thesaurus locupletissimus. Huic ob argumenti similitudinem Pomponii Melae de sitv orbis libros tres, fide diligentiaque summa recognitos adjunximus. Accesserunt his praeter nova scholia. . . . etiam tabulæ geographicæ permultæ, regionum, locorum, marium, sinuumque diversorum situs pulchre delineantes. . . .* Basileæ, 1538; *Colophon:* Basileæ apud Michaelem Insingrinium & Henricum Petri, MDXXXVIII.* It is, consequently, older than both Münster's map of 1544 and Anton Wied's of 1555 (or, according to Michow, 1540), and Herberstein's of 1549, and it indicates the course of the rivers much more correctly than all its successors. To judge from comments which appear on pages 48 and 181 of the work in which the map is found, it is probably based upon information given partly by the learned Canon in Cracow, Mathias à Michau, partly by Herberstein. It appears to be a direct reproduction of their notes to the geography of Russia, before these, so far as practicable, had been modified to accord with the geographical ideas prevailing in the first part of the sixteenth century. In the same edition of Solinus-Mela there is also (page 150) a large map of Asia, which is noteworthy because the part of North America situated opposite to Asia is here indicated

* The map is also found in the edition of Solinus printed in Basel, 1543.

by an inscription, "Terra incognita." It is the first map I know of where a cartographer, if I may use the expression, from the East has ventured over the sea to the New World.

In the note 18, page 185, Mr. Lauridsen tries to show that Bering, and not Müller, was the earliest collector of information on Deschnew's journey from the Lena to Kamtschatka. Mr. Lauridsen's own remarks in other parts of his book prove that this is not correct. The first person who, so far as we know, collected information about the travels of the Cossacks from the mouth of the Lena towards the East, was Tabbert-Strahlenberg. He returned from his imprisonment in Siberia in 1722, and his map was made and known in Russia several years before, but it was printed without the knowledge of Strahlenberg, in Holland in 1725 and 1726, and in Berlin in 1730. It was for its day incomparably the best map of Siberia. The words in which he speaks of the sea voyages east of the Lena, deserve to be considered by those who write about the ice in the Siberian ocean:

"Here the Russians were borne on from the very beginning to the region of Kamtschatka, with great toil and at the peril of their lives, through masses of ice, which are driven towards the shore when the north wind blows, and carried back to sea, when the wind is from the south."

He who wrote these words may be said to deserve the praise, "omne tulit punctum," for they are the most sensible that were spoken about this sea up to the time of Wrangel's voyages. It is wrong, therefore, to rob Strahlenberg, still so manfully active in his captivity, of the priority to which he is entitled. *Even the part of Amer-*

ica opposite to the Tschukt peninsula is here for the first time mapped out, though as an island, from accounts given by the natives, and not, like the Fretum Anian, on the authority of geographical myths. Nor is it true that Strahlenberg, as Mr. Lauridsen (in note 58, page 190) repeats after von Baer, borrowed every thing of value in his book from Messerschmidt. To be convinced of this, it is only necessary to read Strahlenberg's work, rich in original and comprehensive observations, although it cannot be said to be characterized by critical penetration or commendable style. Strahlenberg had already passed eleven years in Siberia before he accompanied Messerschmidt in the first journey the latter made. The map was ready in 1715, before Messerschmidt had thought of a Siberian journey, and his numerous determinations of places were not even made use of in the map of 1730.*

The great northern expedition was a scientific military reconnaissance, directed in the first instance by the celebrated Academy which Peter the Great had created in his capital. The scientific results of this exploration were not less important than the purely geographical ones. It seems, therefore, a little strange that Mr. Lauridsen did not consult the archives of the St. Petersburg Academy for his monograph on the chief of the expedition. It looks, almost, as if he had no knowledge that such archives existed.

Mr. Dall, who in our own time has furnished such important contributions to our knowledge of nature in that sea, has in one or two places some rather imprudent expressions

* Compare Aug. Strindberg, *Philipp Johann Strahlenberg and his map of Asia* (Journal of the Geogr. Section, No. 5, 1879).

about his unfortunate predecessors; but these do not authorize Mr. Lauridsen in attacking Mr. Dall so savagely. Neither have American savants any thing to learn from scholars on this side of the Atlantic in regard to a decorous manner of expression, at least if we are to take Mr. Lauridsen's essay as a standard. It is the first duty of an investigator to find the truth, even if the discovery does not point precisely in the direction he desires. In the present case Mr. Lauridsen has compiled quite an abundance of materials, affording a complete representation of the man, the work of whose life he has depicted. If I were to give a characteristic of Bering's last expedition and had to be guided in parts by Mr. Lauridsen's representation, I should say: "The history of geography has among the greater expeditions very few to show that have given more important results, and have been worse conducted" The important results did not so much come from the geographical discoveries, though these were remarkable, but chiefly from the fact that the "St. Peter" was driven ashore on an island, probably never before visited by man, of which numberless hosts of large warm-blooded animals made their place of resort, animals that never had been hunted or frightened by man; and, further, from the fact that so intelligent a naturalist as Steller was a participant in the expedition and able to describe the animals discovered by it. Here was found a manifestation of nature as it once prevailed all over the globe, though under other and varying forms,—a manifestation that neither has nor can have its counterpart; one for which the naturalist never can be sufficiently grateful, and which he will study in all times with a never decreasing interest. But the expedition was very badly conducted,

and its leader has no right, *on account of this voyage*, to a place of prominence in the annals of great navigators. He has certainly the right to ask that his persevering attempts and the great results gained in spite of all the accidents, the misfortunes, and the miseries which befell him, shall be allowed to weigh in the balance in his favor when the last act of his life is considered. But there is much that could hardly be excused, if there did not exist a plea for this previously undaunted, brave, and well-read sailor, which, so far as I know, no one of his biographers has sufficiently brought into the light. He was no longer fully responsible for his actions, for he was not only ill, but ill of the scurvy, and one of the first symptoms of this disease is precisely the irremediable indifference and indolence, which Bering was accused of during the last stage of his life.

XUM

L. Winnipeg
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St. Louis
Mississippi R.
N. Orleans
Missouri R.
Kansas C.
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Arkansas R.
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Red R.
IND.T.
TEXAS
S.P. R.R.
Rio Grande
Rail R.
Winnipeg
Duluth
St. Paul
Brainerd
Fargo
MINN.
IOWA
Omaha
NEB.
U.P. R.R.
Platte R.
A.T. R.R.
KAN.
Raton
Las Vegas
Glorieta
Albuquerque
N.MEX.
Rincon
Deming
Assiniboine R.
ASSINIBOINE
C.P. R.R.
Saskatchewan R.
N.P.R.R.
Bismarck
DAK.
Glendive
Miles C.
Yellow Stone R.
MONT
WY.
Cheyenne
Denver
COL.
Pueblo
Sherman
Green R.
D.R.G.R.R.
A.P.R.R.
Colorado
Gila R.
Fort Yuma
Beale
Peirson
Tucson
S.P.R.R.
Calgary
Medicine Hat
Kootenay R.
Columbia R.
Spokane
Kalispell
Missoula
Helena
Butte
Deer Lodge
Boise City
Salt L.C.
Provo
Soldiers
UTAH
IDAHO
Snake R.
Pequop
Elko
Winnemucca
NEV.
Needles
ARIZ
Yuma
Eagle
Rocky
F. Thompson
Mt. Hood
WASH.T.
Olympia
Portland
Wallula
OR.
Summit
Sacramento
S. Francisco
CAL.
Caliente
Tehachapa
Mojave
Acton
Los Angeles
Colton
San Bernardino
Los Pinos
PACIFIC OCEAN
ROCKY MOUNTAIN
RAIL ROADS.

HISTORICAL AND GEOGRAPHICAL FEATURES OF THE ROCKY MOUNTAIN RAILROADS.

BY

JAMES DOUGLAS.

The Anglo-Saxon race is enterprising, but it cannot lay just claim to being adventurous. Its migratory movements have been made in no spirit of levity, but in very solemn earnest, from strong religious motives, at the bidding of liberty, or under the stress of over-population. Such movements, having their origin in deep racial impulses, have been slow in their inauguration, but irresistible in their progress and permanent in their results. When, therefore, the race occupies territory it rarely abandons it. If it moves less rapidly than more excitable races, its tenacity in the end proves to be in proportion to its inertia.

The progress of the race on this continent is a commentary on these characteristics, and affords material for an interesting chapter in comparative history. Columbus set foot on one of the Antilles in 1492. Within half a century Spain and Portugal sent out over half a hundred discovery expeditions, and explored, with one debatable gap, the whole coast-line of North and South America from Greenland through the Straits of Magellan to the Cedros Islands off the coast of Lower California. Within that period Spain had occupied the principal West Indian Islands, conquered the empire of the Aztecs and the

Incas, crossed our continent from Florida through Texas and Chihuahua to the Pacific, and ascended the Mississippi to the buffalo country. From the Pacific coast of our continent the Spaniards had penetrated through Arizona into New Mexico and Colorado. On the west coast of South America all the country under the sway of the Incas, including a large part of Ecuador, Peru, and Chile, was actually brought under Spanish rule, and Spain and Portugal were already rivals in discovery and occupation on the east coast of the continent. Meanwhile Portugal had doubled the Cape of Good Hope and opened up trade with the East Indies.

That paroxysm of adventurous discovery in the fifteenth and sixteenth centuries hardly touched England. Two expeditions under the Cabots, and another in 1527 to discover the Northwest passage, all comparatively barren of results, were her only recorded contributions; and France played a hardly more conspicuous part, Jacques Cartier's story of his voyages not stimulating the peasantry of France to expose themselves to snow and frost and scurvy, while the unwelcome revelation that his gold was mica and his diamonds quartz crystals removed any temptations which the French nobles may have felt to emulate the methods so successfully pursued by some of their Spanish brethren of recruiting their fortunes by discovery and conquest in the New World. Such a chapter of geographical discovery throws all modern records into the shade.

Compare with it our vaunted discoveries in Africa. It is now a century since Bruce invaded Africa from the north, and forty-four years since Moffat, and thirty years since his son-in-law Livingstone excited the world's interest

by their publications respecting southern Africa. Since then, every section of the mercantile and manufacturing world, and notably the two great branches of the English-speaking race, have had the strongest inducement to cultivate trade with the teeming population of the great lake region, and there has been opened a wide and most fertile field for religious propagandism. Yet of how comparatively small a portion of the Dark Continent have we any knowledge! In fact, the spirit of discovery through sheer love of adventure and of danger, never strong in our matter-of-fact race, seems to be dead except among small sections of the people, influenced by exceptional surroundings, as it can hardly be excited into spasmodic activity by the double motives of gain and religion. Yet when we do explore, we do it to some purpose. The Spaniards explored the continent with the sword in one hand and the cross in the other, but left only trails behind them; we with pick and shovel are obliterating their trails by railroad beds.

In the seventeenth century we find the rôle of discoverers being played by the French. The English have founded a string of colonies along the inhospitable seaboard of New England and the hardly more attractive coast of Maryland, Virginia, and the Carolinas, but their efforts are all directed towards making comfortable homesteads in the wilderness, framing representative systems of municipal government, and securing political rights from the mother country.

A small Dutch colony has planted itself on the Hudson, but home was even dearer to the Dutchman than to his rival the Yankee. Spanish enterprise has been completely stifled by the extortion and grasping colonial policy

of the crown. But the French have occupied Jacques Cartier's discoveries, and French traders hand-in-hand with French missionaries are penetrating the very recesses of the northern continent. Already long before the close of the seventeenth century, and when the English are commencing to open up by sea a trade in furs with Hudson Bay, the French have established missions and trading-posts as far west as the head of Lake Superior, and their *coureurs des bois*, adopting Indian ways and marrying Indian wives, are wandering through the Rocky Mountains and bringing back stories of the sources of the Missouri. The different spirit actuating the different people is well expressed in their varying habit of adaptability. A Virginian Churchman or a New England Puritan populating the West with half-breeds, would be an anomaly we cannot by the utmost stretch of imagination even conceive of.

A century later, at the time of the collapse of the French power in America, we find the English colonies as lethargic as before. The Hudson and Mohawk valleys had brought the English and Dutch of New York into contact with the French, and into competition with the French fur-trade, but the traffic was apparently uncongenial and not pursued with energy. English enterprise here and elsewhere seemed to be sea-bound. It was unable to leap the Alleghanies.

The delusion with regard to the Southwest passage had been dissipated, the Pacific coast to the extreme north explored, and a wide extent of undeveloped continent thus known to be between the two oceans; but what it contained was gathered only vaguely from the stories of the *coureurs des bois*, and such reports of Hudson Bay agents

as escaped from their well-closed archives. Not a single Englishman had described, if he had crossed, the continent from sea to sea.

It seems absolutely incredible that a community of England's hardiest and most intelligent sons should have been content to remain for two centuries hemmed in between the sea and the Alleghanies, uninspired by the slightest curiosity to know what filled the great gap of three thousand miles between their home and the western sea, or to explore, in its northern extensions, the mountain range from which the Spaniards were gathering gold, and freighting their galleons with silver.

Carver in 1766–67–68 explored the head waters of the Mississippi, and described the country north and northwest of the head of Lake Superior, already long and well known to the French. He tells stories of the tribes reported to live to the west of the Shining Mountains, who had gold so plentiful that they made their most common utensils of it. These rumors stimulated him to try to cross the continent. More than one attempt failed before the War of Independence, breaking out, frustrated his and his companion Whitworth's final plans.

Mackenzie, in 1789–93, following the wonderful waterway which, north of the British line, links the waters of Lake Superior with the Pacific by the intervention of but few unimportant portages, traversed the continent from sea to sea, descending to the Pacific by the Peace River.

The American government, to relieve itself from the opprobrium of ignorance, despatched the Lewis and Clark expeditions in 1805. These officers of the U. S. army ascended the Mississippi almost to its source, crossed the divide near the line of the Northern Pacific Railroad,

descended the Clark Fork of the Columbia, and reached the Pacific by the main stream, returning the following year in divided parties so as to explore more territory. Yet so small a portion of the vast region did they describe, and so vague was the information to be derived from other sources, that when Astor equipped his expedition by sea and land in 1812 to secure the fur trade of the Columbia, Mr. Hunt, who led the overland party, was in a *terra incognita* from the time he left the Missouri, which he unfortunately did at a point apparently not far from Yankton, till he reached the mouth of the Columbia. Even such salient geographical features as the course and character of the great rivers were unknown to any member of the party,—hence the cardinal mistake of supposing the Snake River to be the main stream of the Columbia, and of abandoning their land transport-service on a navigable stretch of that river, far above permanently navigable waters.

But while Lewis and Clark were exploring the head waters of the Missouri, another government expedition under Lieutenant Pike first described the whole Mississippi River, previously known only at intervals, from its rise to its junction with the Missouri. He is the same Lieutenant—afterwards Colonel Pike—whose name is so intimately associated with Colorado; for besides giving it to one of Colorado's magnificent mountains, he first, in 1806, ascended the Arkansas, and cutting across the San Luis Park struck the upper waters of the Rio Grande. To him also the world owes its first knowledge of the country drained by the Platte. It was, of course, not till after the purchase of Louisiana, at the commencement of this century, that the government took steps to acquire some

knowledge of the margins of its vast domain. But certain sections have remained so secluded that Custer's military expedition to the Black Hills of Dakota in 1874, only twelve years ago, gave us the first accurate information about that important region.

The old Spanish settlements and towns on the Rio Grande and in southeastern Colorado were linked to California only by pueblos, such as Pueblo Viejo, Tubac, Tucson, and thus a through route from eastern United States settlements to the Pacific by the Santa Fé trail had been always open through Spanish territory. As we have seen, the early Canadian and United States explorers, in looking for roads across the continent, naturally followed the great water-ways of the Missouri and Saskatchewan to the only points on the Pacific, the mouths of the Columbia and the Peace River, which were known as harbors or whither trade relations drew them. Thus the great central zone, where the Rockies attain their grandest development, and are not penetrated or even approached by any navigable rivers, continued to be the dark spot of the continent, utterly abandoned to the red man and trodden by only such daring trappers as Bridger.

As the northern trail was that taken by the earliest emigrants who led the way to Oregon, its advantages as a railroad route were so apparent that as early as 1835 a railroad from the upper Mississippi to the mouth of the Columbia was actually proposed. But the project was not acted on seriously till 1845, when Asa Whitney nearly succeeded in securing from Congress a land grant in aid of the first Northern Pacific, before which more recent grants dwindle into insignificance.

In 1848 the Mormon exodus from Illinois and the oc-

cupation of the promised land of Deseret was completed, and the country was surprised at learning that in the heart of the great American desert a land, flowing with milk and honey, only waited to be cultivated. The government then, in 1849, undertook a survey of the great basin under Captain Stansbury and Lieutenant Gunnison.

In 1848 gold had been discovered in California, in the year of its transfer from Mexico to the United States, and the adventurous spirits of both hemispheres flocked thither. To most, the straightest road was the best. Neither the high walls of the Rockies nor the snowy summits of the Sierra Nevada could deter them. California, not Oregon, henceforth became the objective point of the emigrant, and railroad projects now pointed to California, not to Oregon.

The government in 1852–54 sent out surveying parties in search of railroad routes across the mountains. Their work as embodied in the famous document issued by the war office (Jefferson Davis being Secretary) between 1855–60: "Reports of explorations and surveys to ascertain the most practicable and economical route for a railroad from the Mississippi River to the Pacific Ocean," is as follows:

(1) A route was surveyed under Governor Stevens along the 47th parallel, which nearly corresponds with that now followed by the Northern Pacific.

(2) Fremont, Stansbury, and Beckwith surveyed the country between the 41st and 43d parallels, and proposed a route not widely different from that selected for the Union and Central Pacific railroads.

(3) Captain Gunnison lost his life at the hands of Indians, or Indians and Mormons, while trying to detect a

practicable route through the sea of mountains amidst which the Denver and Rio Grande railroad now runs between Pueblo and the Salt Lake valley.

(4) Lieutenant Whipple surveyed the country now opened by the Atlantic and Pacific railroad.

(5) Lieutenant John Pope described that route now occupied by the Southern Pacific railroad, which the Secretary of War recommended as the most desirable on the score of length, climate, and gradients.

The State of Missouri was the first to charter a transcontinental route, under the name of the Missouri and Pacific R. R. Co. It was to start from St. Louis, and after running southwest, to follow the 36th parallel through the present Indian Territory to Santa Fé, and thence across to the Pacific. The civil war frustrated this scheme, but hastened the accomplishment of another. To build a road through a region within the radius of active war was hazardous. Yet California, isolated from the rest of the States, it was seen, must be brought within rapid reach of the central power. Hence the organization of the Union and Central Pacific Cos., and the liberal assistance tendered them by government to build a road from the Mississippi to the Pacific, far north of the strife then raging. The charters were signed in July, 1862; the first sod of the Central Pacific was turned on the 23d of February, 1863, but work was not commenced on the Union Pacific till the 12th of November, 1865, after the immediate cause for urgency had passed. Fourteen years, or to July 1876, was the limit of time allowed by the charter for the completion of the joint enterprise, but the eastern and western sections met, and the last spike was driven at the station of Promontory, on the 10th of May, 1869.

This station is 1084 miles from Omaha, but only 850 from San Francisco. Yet taking into account the much greater engineering difficulties which beset the Central road in crossing the Sierra Nevada, than those which obstructed the Union road in the Rocky Mountains, as much credit is due to the one as to the other.

Before the Central road had been even commenced at both ends, in 1864, the Northern Pacific R. R. Co. had obtained a charter. Governor Stevens' survey in 1853 of the Northern route had proved its practicability, but this company organized by Mr. Perham sought in vain for financial assistance till Jay Cooke & Co. came to its rescue and effected thereby their own ruin. Construction was commenced in 1870, but owing to many financial vicissitudes the road was completed only in 1883.

Before this the Southern road had been opened from end to end. While the Texas and Pacific Co., chartered in 1872 to construct a road from Fort Worth in Texas to San Diego on the Pacific, was languidly building from the east, and vigorously soliciting government aid, the large stockholders of the Central Pacific were constructing a line with their own resources, along the proposed route of the Texas and Pacific from the California end. And thus before the Texas and Pacific had laid their tracks through the State of Texas, the Southern Pacific had occupied Lower California, Arizona, and New Mexico, and united with the Texas Pacific proper at the end of 1882. Contemporaneously, the Atchison and Topeka, originally a road looking for support to the agricultural resources of Kansas, had crossed the Raton spur of the Rockies, earned the right of adding Santa Fé to its title, and by connecting with the Southern Pacific at Deming,

created another Rocky Mountain railroad. Since then this company has made an independent outlet for itself to the Pacific at San Diego, by the Atlantic and Pacific R. R. and the Colton Branch.

While these broad-gauge roads were seeking for valleys and easy grades by which to cross the mountains, a narrow-gauge road, controlled by officers, and constructed by engineers, with very broad-gauge ideas, the Denver and Rio Grande R. R., was successfully combating difficulties and scaling heights which only lavish expenditure of money, handled by the highest engineering skill, rendered superable. The road was intended to be a link through the valley of the Rio Grande, between the Southern and Central systems, but the Atchison and Topeka forestalled it. The management then divided its energies between fighting the Union Pacific and reaching the most inaccessible regions in Colorado. The marvellous feats which its builders have really accomplished are as wonderful as those the Union Pacific was supposed by popular imagination to have performed.

The year before last (1884) this road finished laying its tracks, from Denver to Salt Lake City, through the very heart of the mountain region.

These are the principal though by no means the only great Rocky Mountain railroad enterprises, undertaken and completed since 1863. But we must pass on from this historical sketch to trace the geographical features of those sections of the continent which they traverse, as exhibited in their profiles.

The Rocky Mountains, including the whole system of mountains and plateaus from the plains as far as the Pacific coast, attain their greatest development in height

and width along the 41st parallel, which nearly coincides with the line of the Union and Central Pacific R. R., and there exhibit with marked prominence all their features, the principal of which are high and steep eastern and western chains, the Rocky Mountains to the east, and the Sierra Nevada to the west, enclosing an elevated plateau corrugated by diagonal minor ranges. To the west of the western rim is a coast valley, itself protected from the sea by a Coast Range. This structure, with such variations as nature loves to indulge in without departing from uniformity of type, is maintained along the west coast of both North and South America, as well as in the structure of other continents.

THE UNION PACIFIC RAILROAD.

The profile of the Union and Central Pacific roads exhibits these features better than that of any other road. The plains rise by a grade, so easy as not to be appreciable to the eye, from 968 feet at the Missouri to 6,038 feet at Cheyenne, or 5,070 feet in 516 miles, the country changing with the decrease in rain-fall from the rich fertility of the Nebraska prairies, to grazing lands, dry and seemingly valueless, but able formerly to support the buffalo and now their tamer successors.

At Cheyenne the Black Hills rise abruptly from the plain, but like all hills looked at from below, the steepness is illusory, for the train scales them to Sherman, a point 8,235 feet above the sea, in thirty-three miles, and then descends into the Laramie plains, whose average elevation is about 6,500 feet. This is in reality the most northerly of the parks, though not generally ranked among them. The plains are well watered by rivulets

which flow north into the North Platte, the main stream of which is separated from the plains by a ridge 7,168 feet, over which the road runs before ascending the Continental Divide, here only 7,100 feet above sea-level, and therefore more than 1,000 feet lower than the summit of the Black Hills at Sherman, and but 500 feet above the average level of the rolling plains which intervene. To the north and south, high mountain ranges break the surface of the plateau, but the profile shows what an easy highway nature offered the railway builders across the great basin on this parallel. It was always the Indian's and trapper's trail, and was in 1852 suggested by Lieut. Gunnison as a feasible railroad route before the official survey.

To the north and northwest can be seen the Seminole Mountains, the Sweetwater Range, and in the far distance the Wood River Mountains; to the south the Elkhead Mountains, and away to the southwest the spurs of the Uintah Range. From the summit there is a down grade to the Green River, for sixty miles of the way along the Bitter Creek, through an utterly desolate region, the cliffs on either side encroaching close on the valley. The sandstones which here accompany the coal that underlies Wyoming to east and west of the Divide, favor the sterility which elevation and drought alone are enough to produce, but add to the scenic effects by weathering into picturesque bluffs. The Green River, one of the great branches of the Colorado, is the first and only large stream which flows into the Pacific, along this parallel, till the Sierra Nevada is passed; the river and lake system of each section of the great basin—the Utah section and the Nevada section—being self-contained.

The Uintah Range, whose axis is nearly east and west, is now the conspicuous feature to the south, its sides covered with forest, and at its base Beaver Creek, which was Bridger's favorite trapping ground for the American Fur Company as far back as 1820. Up the Big Muddy the rail now ascends a spur of the Uintah, crosses it at Aspen at an elevation of 7,835 feet, and descends into the valley of the Bear. This stream, like many others in the Rockies, doubles on its own course. It rises to the south of the track, flows north, outflanking the Wasatch Range, and returns south to discharge, after a course of 230 miles, into the Great Salt Lake, not over sixty miles west of its source. But the railroad builders tunnelled the high jagged range at Wasatch, and carried the track through the wonderful rock scenery of Echo and Weber Cañons, down the steep western slope of the Wasatch to the Salt Lake valley at Ogden.

Five roads radiate from Ogden: the Union Pacific towards the east; the Central Pacific towards the west; the Denver and Rio Grande towards the southeast; the Utah Central runs due south down the valley; and the Utah Northern as a narrow-gauge road due north through the eastern section of Idaho into Montana, where it connects at Garrison, at the western foot of the Rocky Mountains, with the Northern Pacific. But we must travel forward westward over the

CENTRAL PACIFIC.

From Ogden westward the Central Pacific, after crossing from the Utah into the Nevada depression of the Great Basin, descends by easy grades to the eastern foot of the Sierra Nevada, through a region even more desolate

than that traversed by the Union, between naked mountain ranges, over long stretches of rolling sage-brush plains, hardly redeemed from utter sterility by a ribbon of verdure on the banks of the Humboldt River. The railroad follows the valley of this river from Moore Station for a distance of 350 miles till it enters the Humboldt Lake, and flowing thence, loses itself in the sink of the Carson. The profile shows this westerly basin, occupied by the Humboldt and other lakes, to have almost the same level as that of the Great Salt Lake. Into it flow the Humboldt from the east and the Carson and Truckee rivers from the west, all perennial streams carrying large bodies of water; but the thirsty sands and the rapid evaporation from the lakes, which these rivers form, drink up all they contribute. Carson Lake, which, like the Great Salt Lake of Utah, is the residuary recipient of the whole river and lake system of this portion of the Nevada desert, has no outlet. The valley of the Truckee was selected by the railroad engineers as the most feasible route out of the basin. The track, therefore, after traversing from Lovelocks to Wadsworth, about 63 miles, a desert region white with alkali, and full of solfataric activity, bubbling with hot springs, saturated with soda and borax, and productive of brimstone, enters the valley of the Truckee, and following its narrow channel, too barren generally to produce much, even with irrigation, reaches the town of Truckee, a distance of 62 miles, gaining an elevation in that distance of 1,742 feet. At Truckee commences the pull up to the summit, a distance of only 14 miles, in which 1,198 feet of elevation are gained. The scenery of Donner Lake, which the train skirts after leaving Truckee, the piles of mountains rising more than

3,000 feet above the tunnel by which the road cuts through the crest of the Sierra, and on the western side the glimpse of the birth and growth of the streams which dash down through the forests to feed the Sacramento, give this section of the road pre-eminence in beauty; but what between tunnels and 50 miles of snow-sheds, the traveller is kept in a state of constant irritation, as angry as when in New England he expects to get the full view of a beautiful river and enters a covered bridge. Down the western slope of the Sierra the train speeds from the summit at 7,017 feet to Colfax, a descent of 4,595 feet in 51 miles, through the pines into the oak glades and down to the plains. The relief of passing at a bound from the most desolate spot on the continent, the Humboldt Desert, into one of the most fertile of the world's valleys, that of the Sacramento, is intense. The Coast Range does not appear on the profile, because the railroad terminates on the Upper Bay formed by the junction of the Sacramento and the San Joaquin rivers, and this great harbor is carved out of and sheltered by the Coast Range, on whose hills San Francisco itself is built.

THE DENVER AND RIO GRANDE RAILROAD.

The Denver and Rio Grande, as already stated, surpasses all competitors in the feats of engineering its builders have compassed. Each of its branches was, at the time of construction, the most remarkable deed of daring yet attempted, and each successive effort has surpassed its predecessors in boldness of conception and execution.

Our map would be covered to confusion were we to attempt to show each of the Denver and Rio Grande lines.

The first mountain branch was that over the Sangre de Cristo Range by the Veta Pass, thence across the San Luis Park and down the valley of the Rio Grande to near Sante Fé. From this, two feeders diverge to the San Juan and to other as inaccessible mining localities, heretofore deemed difficult of approach by ordinary vehicles.

But what interests us most is the Pueblo and Salt Lake section, which forms one half of another trans-mountain route.

In its career it cuts the Rockies at their highest and wildest, to the west of Pueblo, taking advantage of the Arkansas to reach the water-shed of the continent at Marshall Pass.

The Royal Gorge, in the Grand Cañon of the Arkansas, is the portal which admits the traveller from the plains into the recesses of the mountains where the river receives its life. Above the cañon, the valley widens, and is productive of grasses and of such vegetables as the great altitude permits of coming to maturity. At Salida the branch to Leadville continues up the Arkansas, but the main road ascends the Saguache range to the Continental Divide. This is crossed by Marshall Pass at an elevation of 10,820 feet by grades reaching 220 feet to the mile.

From this great elevation the eye wanders far and near over forest-clad mountains with rounded outline, less startling, perhaps, but more pleasing than the bare sides and jagged profiles of the Eastern and the Sangre de Cristo Ranges, for colors and curves are principal elements of beauty. If they do not elicit wonder, they excite pleasure. Nature when clad in neutral tints is bereft of half her charms. Looking from this vantage ground it would

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seem impossible that the railroad could find a path through the network of ranges, the peaks of which tower to north and south and east and west to elevations of 12,000 and 14,000 feet—not one peak, but many. Yet though the road follows river-courses they are not always river valleys, but deep, steep gorges, over whose stony sides the engineers had to be suspended in locating the road, and the miners in dislodging the rocks to gain a footing for the road-bed.

The Tomichi River, the main confluent of the Green, is reached almost at once after the Divide is passed, and where this branch unites with its northern sister to form the Gunnison, is rising the city of Gunnison, the future metropolis of the region, at an altitude of 7,680 feet. Below Gunnison the river cuts through mountain and plateau, creating the Black Cañon of the Gunnison, less gloomy than the Grand Cañon of the Arkansas, and enlivened by a greater variety of rocky outline, for the gorge has been carved out of limestones and sandstones, instead of riven through the old crystalline rocks. It is broader, and is streaked with color derived from the weathering of the rocks, as well as from vegetation. The Gunnison Cañon becomes more rugged below Gold Creek, and rather than follow it the road crosses Squaw Mountain and joins at its western base the Uncompahgre branch of the Gunnison. This it follows to its junction with the main river at the town of Delta, and it still keeps to this highway of nature across the Grand Mesa till it unites with the Grand River at Grand Junction. For 200 miles farther westward the road ascends a series of barren steppes before surmounting the Wasatch and entering the Great Salt Lake Valley.

THE SOUTHERN PACIFIC RAILROAD.

The Southern Pacific is the only United States road whose termini are on the two oceans—the eastern at New Orleans, the western at San Francisco. It runs through the swamps and across the bayous of Louisiana, over the low coast lands of Texas to Houston, and thence traverses from east to west its fertile cotton lands to beyond the old Spanish town of San Antonio, where the land grows less fertile. At 170 miles from San Antonio the road enters the Cañon of the Rio Grande. Through this it is built on benches overhanging the river, and within a stone's throw of the Mexican shore, till it reaches the undulating limestone plateau through which the river has cleft this narrow trough. The train emerges from the cañon at Langtry, which is always guarded by a company of U. S. cavalry, as it is the only ford across the Rio Grande for a distance of 150 miles. On the plateau the scenery differs from that of the plains to the north only in the vegetation which clothes it. We are on the "*Llanos estacados*," the "Staked Plains" of other days. Though no river runs for hundreds of miles through this dreary waste, springs occur, and water in many places is pumped to the surface to supply the cattle and sheep which roam over this scorched wilderness. These, though necessarily few in number to the mile, are an immense multitude in the aggregate. Not a hill breaks the horizon for more than a hundred miles, but the road ascends gradually to Sanderson, where short isolated ranges commence to rise out of the plateau, and the mountain scenery assumes the aspect which it henceforth bears along the line of road, all through New Mexico and Arizona, till the Colorado is passed and the Yuma Desert is entered.

The Rocky Mountains, as we have seen, attain their grandest development in Colorado. In northern New Mexico they still maintain their character as an unbroken Cordillera. But further south it becomes impossible to identify the features which we have seen the continent to possess along the 41st parallel. In western Texas, central New Mexico, and in northern and central Arizona there is a complicated system of short ranges so interlocked as to leave but narrow valleys between; while in the southern portion of these territories similar ranges, with a general northeast and southwest axis, spring from the lofty plateau, whose average elevation is about 4,000 feet, in isolated mountain masses, with great stretches of intervening plain. The Texas Pacific Railroad has crossed the same plains to the north of the Southern Pacific, and entered the same mountain scenery in its straight course from Fort Worth to Sierra Blanca, where, at 91 miles from El Paso on the Rio Grande, it unites with the Southern Pacific. Westward the single railroad winds among these miniature ranges without, as the profile shows, any great variation in grade, and yet by a route so tortuous that long stretches are built to reach points a few miles apart. Bare, treeless mountains before and behind, and on either side, close in every view, while yet the train is gradually crossing a plain of sandy or baked reddish soil, sprinkled with tufts of grass and dotted with soap-weed or yucca, bushes of grease-wood, and groves of mesquite, and in places groups of huge cacti and smaller members of the same grotesque family. Only two rivers, the San Pedro at Benson, and the Santa Cruz at Tucson—the latter generally dry,—are crossed between the Rio Grande and the Colorado, a distance of 550 miles.

The Rocky Mountains have been completely shattered, and their scattered fragments seem to strew the plains. They reunite in the Sierra Madre of Chihuahua, immediately south of the line, recover from their disorder, close in their ranks, and present an unbroken front southward to the Isthmus; but in New Mexico and Arizona they have been completely obliterated as a Cordillera.

The Rio Colorado is crossed at sixty miles above its mouth, where it flows between low sandy banks; for the grand cañon has terminated hundreds of miles above, before the river has turned from its east and west to its north and south course. Before reaching the river the country traversed has become, if possible, more forlorn, and desolation reigns supreme. After the bridge is crossed the Yuma Desert is entered. In traversing it the train runs for hour after hour over plains of sand, thirty miles of which are below sea-level. At all seasons a *mirage* is seen as tempting as any which deludes the African traveller. At places the sandy surface is flat, at others it rises into hillocks like the dunes of Holland, stretches of snow-white alkali vary the color, and what vegetation there is partakes of the sandy tint. The San Bernardino Mountains rise steeply ahead, their slopes as bare and rocky as the mountain ranges between which we have been passing now for over 1,000 miles. They represent the Sierra Nevada mountains which, along this zone of the continent, dwindle, like the Rockies, into insignificance. Further south they continue to assert themselves, but still more feebly, in the peninsula of Lower California, before being lost in the Pacific.

As we ascend the eastern slope of the San Bernardino range the desert merges into arable land, but the sum-

mit of the Gorgonia Pass is so speedily reached that the train seems to leap as if by magic from dreary sterility into the orange groves of Colton and Los Angeles, and the rich verdure of the San Fernando Valley. Here the Coast Range to the west is well defined; but the coast valley in which this oasis is enshrined, rapidly contracts to the north, and the Sierra Nevada and the Coast Range coalesce into a network of cross ranges through which the selection of a practicable railroad route was no easy task. That selected passes from the head of the valley easterly through the Soledad Pass into the Mojave Desert, the northerly extension of the Yuma Desert, over which we travelled, and then returns through a maze of mountains over the Tehachape Pass northwesterly into the great longitudinal coast valley. In crossing the pass the grades are reduced by making the road describe the figure ∞ round two adjacent isolated hills forming the well known loop.

This is the last engineering feature of note, for the road does not again leave the broad fertile plain of the San Joaquin Valley, closed to the east by the high snow-capped wall of the Sierra Nevada, and to the west by the low wall of the Coast Range.

THE ATCHISON AND TOPEKA RAILROAD.

The Atchison and Topeka started as a prairie road, but through its ramifications it has become the most extensive of all the mountain railroad systems. It has stretched in two directions into Mexico, but with these branches we have not to do.

The mountain section commences at Trinidad, Colorado, where the road has risen upon the plains from 765 feet

at Kansas City, to 5,981 feet at Trinidad, in a distance of 636 miles. We have seen that on the line of the Union Pacific, about 180 miles to the north, from Omaha to Cheyenne, in a distance of 516 miles an elevation of 6,038 feet was attained. At Trinidad, in the midst of a coal-field extending to both sides of the Raton Range, the ascent of this spur of the Rockies commences, and is completed in twelve miles by a tunnel at an elevation of 7,612 feet above the sea. The road now issues on those vast rolling plains which spread over northern New Mexico, Texas, and the Indian Territory, and which feed a thousand rivulets that combine to make the Red and Canadian Rivers, discharging into the Mississippi, and the Pecos, which help to swell the Lower Rio Grande. The road proceeds south with the snowy range of the Sangre de Cristo bounding the view to the west. Behind that flows the Rio Grande, and only beyond that again rises the Continental Divide. Over it the line does not pass, for after crossing the plateau for 175 miles at elevations varying from 5,000 to 6,600 feet, it mounts the Sangre de Cristo Range (here the Glorieta), descends into the valley of the Rio Grande, and follows it for 300 miles to the Mexican frontier town of El Paso.

THE ATLANTIC AND PACIFIC RAILROAD.

But at the old Spanish town of Albuquerque a cross-road branches west, which completes the transcontinental character of the Atchison and Topeka. It is really a section of the St. Louis and Pacific, which is itself a survival of the old Missouri road, of which I spoke in the historical sketch. It runs for all the distance between Albuquerque on the Rio Grande, and the

Colorado River, at the Needles, through the most mountainous section of New Mexico and Arizona, at a very high average altitude. The Continental Divide is passed near Coolidge, at an elevation of 7,306 feet, and the road subsequently runs among heavily pine-clad ranges, past the foot of the San Francisco Mountains, parallel with, and at one spot not more than twenty miles south of, the Grand Cañon of the Colorado, and over the southern extension of the Great Basin. The Colorado River crossed, the road traverses the same dreary waste which in the south we knew as the Yuma Desert, and in the north as the Humboldt Desert, ere it joins the Southern Pacific at Mojave station. The Colton branch completes its direct connection with the Pacific at San Diego.

THE NORTHERN PACIFIC RAILROAD.

We have seen that a Northern Pacific R. R. was the first proposed but almost the last built. As now constructed its eastern terminus is at St. Paul. Thence it sweeps for 275 miles over the rich prairies of Minnesota, then spans the Red River of the north, pursues its way due west still through the most fertile farm-land, crosses the Missouri at Bismarck, and sweeps onward again over deep, rich, black soil till the Bad Lands of Dakota are reached near the Montana boundary; a total distance of about 586 miles from its starting-point. The curve of farming land represents, proceeding northward, that of the rain-fall. Here it reaches the very foot-hills of the Rockies. But throughout the whole mountain zone in this parallel the climate is sufficiently humid in average years to clothe the hill-sides everywhere with nutritive grass, and to fill the valleys with perennial streams,—

hence the enormous cattle-ranching capacity of Montana along its entire width of 800 miles.

The Bad Lands are a relief to the traveller wearied by his long journey over these hundreds of miles of prairie. That these prairies have been laid out into immense farms, and are cultivated by machinery, does not increase their picturesqueness, while it removes from them that human interest with which we invest the homesteads of families who are trying to deserve a living from the earth and to return her kindness by adorning her, in their humble way, with trees and fruits and flowers.

The Bad Lands, which the railway guide-books, jealous of the narrow strip of twenty miles being considered unfit for occupation, ingeniously say were so called by the early French trappers because they were *terres mauvaises à traverser*, not, however, *à cultiver*, owe their origin probably to the lignite which underlies them. Here the outcropping beds have become ignited, and by the heat generated have altered the color and character of the adjacent shales and sandstone, rendering them more liable to erosion by water and wind, the combined influence of which has carved the whole country into most fantastic forms. The great eastern buttresses of the Rocky Mountains now loom into view, but the road remains on the prairies, skirting the Powder Range till it strikes the Yellowstone River at Glendive. To its valley it clings for 340 miles, or as far as Livingstone, where this most important of the northern affluents of the Missouri turns southward to draw its waters from the heart of the Rockies and enhance the beauties of the Yellowstone Park. This valley, where followed by the railroad, is narrow, not averaging three miles in width, and enclosed by bluffs sparsely

clad with pine, which, though low, are still high enough to shut out all but glimpses of the Big Horn and Yellowstone Ranges to the south, which have deflected the river from a straight course between its source and discharge. But each of the rivers which flow into it from the south, fed by the great spurs of the main range, the Powder River, the Tongue, the Rosebud, and the Big Horn, remind us of the last desperate struggle of the dominant nation of the north, the Sioux, against the march of the white man between 1872 and 1877, hastened by the progress of this very railway—a struggle rendered memorable by the daring deeds and untimely end of Custer. In this valley also is a memento of Clark, who, on his return journey in 1806, carved his name on a prominent rock and called it Pompey's Pillar—a name retained for the neighboring railway station.

From St. Paul to Livingstone the grade has been easy and the elevation low. But the road after leaving the Yellowstone commences to climb the Bozeman Range, a spur of the Rocky Mountains. It cuts off the summit by a tunnel, at an elevation of 5,565 feet, and emerges in a wild gorge which it follows along the stream of the Gallatin to the base of the range. Here it enters the birthplace of the Missouri, an amphitheatre of great hills where the Gallatin, the Madison, and the Jefferson unite their waters to form this mighty transcontinental river, which thus springs into existence as a stream of considerable size. We follow its banks for thirty miles, but the Rocky Mountains here bar its further progress westward, and it is prevented from reaching by a straight course its destination in the eastern sea by the confused mass of the Little Belt Mountains, round which it sweeps, through

Clark's Gate of the Rockies, due north, over the falls of the Missouri, and thence as a navigable river eastward. But the road pursues its way westward, crossing the Continental Divide through the Mullan Tunnel, at an elevation of only 5,648 feet.

We are now in the golden land, and almost every valley has been turned over and over in search of the precious dust. The beautiful town of Helena, near the foot of the Divide, stands in a wilderness of boulders, heaps and trenches, and the surface of the valleys near Butte, Bannock, and Virginia City, and many another spot, looks like the Bad Lands of Dakota in miniature, tossed out of all shape by the myriads of miners who from 1861, when gold was first discovered in Deer Lodge County, till recently, have extracted from the shallow places of this section of Montana over one hundred millions of dollars. But little is left in this accessible condition, and what little there is will probably remain unmolested, as the Montana miners have ordered away the Chinese.

The Rocky Mountains here, though not of the majestic proportions of the Colorado Range, rise high both north and south of the Mullan Pass. Along this parallel the range seems to have been, as it were, spliced, the Bitter Root Mountains from the south overlapping on the west the main range, which descends from the north. The engineers of the road took advantage of the point where the mass of the range, being thus divided, was reduced in height and a passage was made easy. Tortuously the road ascends the eastern slope of the Continental Divide from Helena at 3,980 feet to the tunnel, affording a magnificent glimpse of the mountains to the south, which enclose the National Park; but the western descent is less

rapid into the valley which carries towards the Columbia the waters of the Deer Lodge Creek, *alias* Hellgate River (the former the name in the farming section of its course, the latter in the mining). The mountains close in,—the Bitter Root Mountains on the left—the main range on the right—till the valley is contracted into a gorge, rendered more sombre by the heavy growth of pines which clothe the rocks; for now that we have crossed the mountains, both plain and hill are forest-clad. Northwest the road runs along the banks of the streams, now swollen into the Clark's Fork of the Columbia, unable to escape westward over the high Bitter Root Range,—bitter indeed to the thousands of penniless prospectors, who three years ago flocked even from the warm southern territories and Mexico to seek for but gather no gold in its snow-clad Cœur d'Alene mines. But where Clark's Fork expands into the beautiful lake of Pend d'Oreille the road finds egress from the mountains and enters the northern extension of the great plateau, which we have traversed in Arizona, and again when crossing the Great Basin on the Union and Central roads. Only here, as the Rocky Mountains point northwest and the Sierra Nevada and their extension, the Cascade Mountains, have a slightly northeasterly trend, the great valley has been crushed in, almost to extinction. It is at this point only 100 miles across, and at less than 100 miles farther to the north it ceases to be well defined. There the Rocky Mountains and the Cascades are built together into the one broad wall, supporting an elevated plateau, against which the waters of the Pacific beat to the furthest limit of the continent.

But though the Great Basin has shrunk to such meagre proportions, its contents have grown in value. We are

far north, but the warm ocean current, flowing from Japan, carries heat and moisture to the coast, and thus the climate of this section of Washington Territory, even east of the Cascades, so assists the fertility of its soil, that the productiveness of this extreme end of the Great Basin almost defies belief. The road cuts diagonally across the basin from the northeast to the southwest, till it strikes the Columbia at Ainsworth.

The gorge which this magnificent river has cut through the Cascades—the representatives of the Sierra Nevada—for a distance of over 200 miles, was taken advantage of by the railroad builders to make their escape to the sea. The only difficult engineering and construction along the road occur in this section, for so precipitously do the banks rise out of the water below to Dalles, that the road-bed had in places to be carved out of the rocky escarpment. The old Oregon trail reaches the Pacific by this route, but the difficulties of road-building were so great that the emigrants never attempted to force a passage by wagon below the Cascades. The railway was the first road of any kind on the banks of this stretch of the lower Columbia.

The Cascades here soar into magnificent proportions, a number of peaks rising above the snow line, as Tacoma, 14,860 feet, and Mt. Hood, 11,025 feet.

Portland is on the Willamette River, a large stream which flows from south to north down the coast valley and joins the Columbia at the bend, where it turns northward to seek an outlet through the Coast Range, which therefore does not of course appear in the profile. Here again we have found all the topographical elements which combine to shape the western half of our continent.

But in the next section, that defined by the surveys of the Canadian Pacific Railway, they are no longer all recognizable.

THE CANADIAN PACIFIC RAILROAD.

The building of the Canadian Pacific was even more a political necessity than the building of the Union. It followed as a consequence on the admission of British Columbia to the Dominion; nay, rather, it was the price offered to British Columbia as an inducement to join the sisterhood of federated provinces. The surveys were commenced in 1871, and work was begun and languidly prosecuted for years, chiefly in the prairie districts, until the present Company was organized in 1880, when construction was pressed with such energy that the track was completed from end to end last autumn. The Company now owns and operates a continuous line from Quebec to the Pacific, and soon expects to control its own track to the Atlantic seaboard. It therefore divides with the Southern Pacific the advantage of operating a perfectly independent road from tide-water on the Atlantic to tide-water on the Pacific.

The line divides itself naturally into three main sections, distinct in their geographical features.

The First Section is that which follows for part of the way the old *voyageur* route from Montreal to Georgian Bay up the Ottawa and up the Mattawan and along Lake Nipissing. Thence it cuts across country to Lake Huron, and skirts the north shore of that lake and of Lake Superior, running between Lakes Superior and Nipigon to Port Arthur and Fort William, on Thunder Bay, Lake Superior.

This whole region, from the Ottawa to Fort William, a tract of 670 miles in length with a width of 300 miles between the lakes and Hudson Bay, covering therefore an area of 200,000 square miles, is to all intents and purposes unexplored. The cold is not more excessive than in the province of Quebec, and the snow-fall is less, but most of the land is unfit for settlement, and there seem to be no such pine forests (unless perhaps in the valley of the Spanish River) as give immediate available value to the valleys of the St. Maurice, the Ottawa, and its eastern tributaries. But it is intersected at distances of about twenty-five miles by large and rapid rivers, along whose valleys, as well as among the labyrinth of lakes which occupy the Height of Land to the north of the Rocky River of Lake Superior, there are extensive areas of land peculiarly fertile in grasses and roots. The azoic and palæozoic rocks which underlie the whole of it are probably as productive of mineral there as elsewhere. At any rate, the Canadian Pacific has opened up a new region on the eastern slope of the continent larger than the whole of New England, New York, Pennsylvania, Virginia, and Ohio, possessing the possibilities of wealth which are attached to every large section of the world's surface.

The real motive, however, for building this section was the military and political necessity of railroad communication between the members of the Confederation, and the speed with which troops were thrown into the northwest last winter justified the wisdom of its construction. Otherwise the Canadian Pacific proper would, like the other Pacific roads, have united with the eastern system of United States roads at or near the northwest end of Lake Superior.

The mention of Lake Nipigon recalls the doings of one of the paladins of northwestern exploration, whose exploits have been strangely overlooked in our day. In 1731 Varenne de la Verandraye was commandant of the French fort of Lake Nipigon, and heard the same stories of Lake Winnipeg and the country beyond, which the Jesuit Fathers, who ministered at the Mission of the Holy Spirit on Lake Superior, had recorded in their *Relations* half a century before. They fired him with the true enthusiasm of adventure, and, aided by a Canadian commercial house and permission from the French crown, he spent the remainder of his life in exploring the routes of the Northern and Canadian Pacific railroads more than half a century before Lewis and Clark's day. He ascended the Missouri to the Rocky Mountains, but did not cross them. Subsequently he explored the Assiniboine and Saskatchewan, dying almost on the summit of the Rockies in 1749, trying to reach the great Bitter Sea which his Indian guides told him was so near.

This northern zone of the continent though so cold, or rather because so cold, was better known than any toward the south, till we reach the Spanish provinces of Mexico and California. The French had tracked it for furs, and they had established in it missions and trading stations. Contemporaneously the Hudson Bay Company was trafficking with the Indians for their furs at posts along the margin of Hudson Bay.

The two Canadian companies of fur traders consolidated in 1805 into the Northwest Company, which had its head-quarters at Fort William, and drew its furs from every stream of the great prairies and mountains to the very shores of the Pacific; with it the Hudson Bay Com-

pany soon competed for the peltries of the interior. It was to check or share their trade that Astor sent out his expedition to found Astoria on the Columbia River. I have already mentioned Mackenzie's first recorded trip from sea to sea by the Peace River. Fraser, another fur trader, reached the sea by the river which bears his name. But not only had this section of the continent been explored with sledge and canoe by the fur traders, but in its heart, at the confluence of the Red River with the Assiniboine, Lord Selkirk in 1811 had taken steps to found his unhappy colony, recognizing the marvellous fertility of the Manitoba prairies.

His views on many social subjects were as much in advance of his generation as were those of Paterson when he founded his ill-fated Darien Colony. The times were not ripe. Many concurrent circumstances must combine to insure success in great social movements. The movements create the circumstances, and the circumstances again stimulate and propel the movements. But when they originate in some individual effort, no matter how philanthropically noble or theoretically correct, they generally end in disaster. But over their ruins the race advances.

Second Section.—From Fort William, on Thunder Bay, the road follows the valley of the Kaministiquia and Mattawan for 50 miles till it reaches the low watershed between Lake Superior and Hudson Bay, not far from where this Laurentian ridge, throwing off a spur, deflects its waters, some to the great lakes, some to the Arctic Sea, and some to the Gulf of Mexico. From this point, for 400 miles, till the Red River is approached, the road skirts a chain of these numberless lakes, which here con-

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tend with the amphibious land for complete dominion. It is strange in this far northern clime to find vegetation growing so rank as to build up land in the water. Yet the *muskeg* or *sink-hole* of these vast swamps is the outgrowth of such floating islands as surprised the Spaniards in the Lake of Tezcuco and so seriously obstruct the navigation of the Upper Nile. Here they seem to be solid land till the railway builder commences to weight them down with his embankment, when their hollowness becomes apparent. At Barclay the road crossed a *muskeg* beneath which, it was estimated, from the amount of filling required, that there must have been a cavity 200 feet deep. It is unnecessary to point out through what a different climate and country the road passes from that traversed by its southern rivals. The lake region, it is true, commences within the confines of the Northern Pacific. There the lakes offer an agreeable diversion from the land; here the land unfortunately has to be looked for as a diversion from the water. Farther south the land languishes for want of moisture; here it is drowned by a surfeit of water. Happily in THE THIRD SECTION, the prairie division, the balance between land, and water, rain-fall and drought, is better maintained than in any prairie region of the whole west; and were it not for the great cold of the winter months, the fertile belt of the provinces of Manitoba, Assiniboia and Alberta, for 800 miles westward from Winnipeg to Calgary, would claim undisputed pre-eminence in value as farming and grazing land over the regions tributary to any of the southern roads. The remarkable leniency of the climate along the base of the Northern Rockies, even as far north as Lake Athabasca, has always been a matter of sur-

prise, and is more or less a meteorological puzzle. It is, however, a fruitful fact to the Canadian Pacific.

From the rim of Lake Superior to the Red River, near its discharge into Lake Winnipeg, you see from the profile with what a regular down-grade the road follows the water highway. From Winnipeg west it ascends another grade in the valleys of the Assiniboine and Saskatchewan. The country traversed rises by three steppes: that of the Red River, with an elevation of 800 feet, through that of the Qu'Appelle district, whose elevation is 1,600 feet, to the Calgary plateau, with an average altitude of 3,000 feet. At Mosleyville the foot-hills are reached, and at Padmon, 904 miles from Winnipeg, the main range is entered through the Bow River Pass. The ascent thence is easy to the summit, where at 960 miles from Winnipeg, from twin lakes nestling in a valley four miles wide, two streams flow, one to the Atlantic, another to the Pacific. The mountains rise formidably on each side the valley, but the Divide is passed by grades which, except for the upper five miles of the Bow River, where they attain 116 feet to the mile, nowhere exceed 40 feet. Thus the Rocky Mountains are crossed at an elevation of 5,300 feet, through a grassy vale with glacier-clad mountains towering from 5,000 to 6,000 feet on either side, displaying all the sublimity from height and ruggedness of the Colorado mountains, in contrast with forest and verdure more suggestive of Alpine scenery than any thing upon the continent. Down the west-bound stream the track follows the Kicking-Horse River for 47 miles, to the Columbia, here flowing in a broad stream to the northwest. Down the Columbia River it descends, though here this glorious stream, which begins with

a width of a mile, is rather a long, sinuous lake than a river. The Selkirk Range lies coastward, and over it the road now passes by aid of the Beaver River valley at an elevation of 4,300 feet, to again meet and cross the Columbia now flowing southwest. The grades in descending from the main range into the valley where the Columbia is first crossed, in ascending the Selkirk Range, and in again descending by the Ille-Cille-Wact into the Columbia valley to cross it by the second bridge, are for shorter distances 116 feet to the mile. Another range has still to be crossed, the Gold Range, by the Eagle Pass, the three ranges following like waves of decreasing volume. Westward of the Gold Range the road enters the valley of the South Thompson, and skirts the banks of the Shuswap Lake (with one leap over an obstructing promontory) and the South Thompson River to Kamloops, where the North and South Thompson unite and discharge their streams into Kamloops Lake.

From Kamloops the road follows the lake, and the Thompson, and finally the Fraser River through the gorge which it has cut through the Cascade Range. At the mouth of the gorge is Yale, and fifteen miles below is Hope.

Below Yale the waters become tamer, and at Hope they are navigable for river-boats to Westminster, a port of capacity sufficient for the largest ships. Twenty-six miles from Port Hammond, where the railroad leaves the Fraser River, is Vancouver, the terminus of the road.

To identify the geographical features of the section is more or less guesswork. The first and highest range crossed is undoubtedly the Rockies. The last range, not crossed by the railway, but penetrated by the gorge of the Fraser, is generally identified with the southern Coast

Range. It more correctly corresponds, I think, to the prolongation of the Sierra Nevada, the Gulf of Georgia occupying the coast valley, and the Coast Range surviving in the island of Vancouver and the Queen Charlotte group. The intermediate ranges, the Selkirk and the Gold, are probably homologous with the Wasatch and Humboldt, but the crushing together of the whole mountain system has obliterated the great valleys; and the change in climate, resulting in the creation of numerous large and impetuous rivers, has introduced corroding modifying influences not so appreciably felt in the configuration of the southern mountain and valley system. From the base of the Rockies at Cheyenne, on the Union Pacific, to the foot of the Sierra Nevada at Colfax is 885 miles. On the Northern Pacific route, about 500 miles north of the Central Pacific, between corresponding points the mountain system is 590 miles wide, whereas from the base of the Rockies here to what we may assume to be the base of the Sierra chain is only 330 miles.

The scenery of the mountains in this parallel is modified not only by these geographical variations but by the heavy clothing of forest trees. The lumber traffic will be a source of large revenue to the railroad, and one which will grow rapidly in value, for lumber is already becoming scarce on the Pacific. The devastation of the forests of California and Oregon is being carried on with even more ruthless waste than that with which ours are being swept away. It is not in the nature of a Californian to plant for posterity a sapling to replace the tree he cuts down. The thick covering of soil and timber will seriously interfere with and retard prospecting for mineral, but as the arbitrary line between the United States and

the British provinces does not probably limit the deposits of valuable minerals, they will be gradually discovered, and more gradually exhausted than our own. The magnificent scenery is also, not without warrant, counted upon as one source of revenue to the railroad.

CONCLUSIONS.

This rapid sketch may be appropriately supplemented by a table of distances:

UNION & CENTRAL RAILROAD.

San Francisco to Omaha	1,865	miles.
Omaha to New York	1,412	"
San Francisco to New York	3,277	miles.
New York to Liverpool	3,065	"
San Francisco to Liverpool	6,342	miles.
Yokohama to San Francisco	4,731	"
Yokohama to Liverpool	11,073	miles.

3,277 miles being by rail and 7,796 miles by water.

SOUTHERN PACIFIC RAILROAD.

San Francisco to New Orleans	2,476	miles.
New Orleans to New York, by sea	2,519	"
San Francisco to New York	4,995	miles.
New Orleans to Liverpool	4,767	"
San Francisco to Liverpool	7,243	miles.
Yokohama to San Francisco	4,731	"
Yokohama to Liverpool	11,974	miles.

2,476 miles being by rail and 9,498 miles by water.

ATCHISON, TOPEKA, & SANTA FÉ.

San Francisco to Kansas City, via Deming - -	2,347	miles.
Kansas City to New York - - - - - -	1,251	"
San Francisco to New York - - - - - -	3,598	miles.

ATLANTIC & PACIFIC, AND ATCHISON, TOPEKA, & SANTA FÉ.

San Francisco to Kansas City - - - - -	2,099	miles.
Kansas City to New York - - - - - -	1,251	"
San Francisco to New York - - - - -	3,350	miles.

NORTHERN PACIFIC RAILROAD.

Portland to St. Paul - - - - - - -	1,911	miles.
St. Paul to New York - - - - - - -	1,120	"
Portland to New York - - - - - - -	3,031	miles.
New York to Liverpool - - - - - -	3,065	"
Portland to Liverpool - - - - - - -	6,096	miles.

CANADIAN PACIFIC RAILROAD.

Port Moody to Montreal - - - - - -	2,868	miles.
Montreal to Liverpool - - - - - -	2,820	"
Port Moody to Liverpool - - - - - -	5,688	miles.
Yokohama to Port Moody - - - - - -	4,336	"
Yokohama to Liverpool - - - - - -	10,024	miles.

You will perceive that the comparison of distances from sea to sea is in favor of the Southern Pacific, but the comparison of profiles slightly favors the Canadian Pacific. This road also stands second on the list as regards distances. These advantages lie, therefore, between the most northerly and the most southerly of the six competitors. Climate is, however, an important factor when we

are judging of the commercial value of each route, and we must remember that the degree of cold and the snowfall are influenced by altitude even more than by latitude. Hence the Canadian and the Central in this respect stand almost on a par. The road most favorably situated as regards climate is the Southern; but the semi-tropical rains of Southern California and Texas are at times as obstructive to traffic as the snows of the north. No road, therefore, can claim such geographical superiority over its rivals as to give it supreme advantage, and therefore relieve it from the necessity of maintaining a conciliatory attitude towards its competitors and its customers.

A few words as to the products—in men and material—which the building of this vast system of roads, with their aggregate of over 23,000 miles of track, has created. They have to all intents and purposes doubled the available area of this country and Canada, and done it in the short period of twenty years. The sudden opening up of the great West has, therefore, of necessity had momentous consequence upon the character, not only of those who have peopled it, but by reaction upon all classes, even those farthest removed in occupation or locality. Certainly one of the most important influences has been the pernicious effect which the handling of such enormous sums as have been expended on these railroads has had on the political and financial morality of our great centres of government and trade; and the chief wealth of the West having been in the precious metals, a spirit of gambling has been generated both in those who work the mines and those who speculate in their actual or possible production. As the money so rapidly spent on the railroads, and that gathered as rapidly from the

gold and silver mines, together amounts to over three and a half billions of dollars, the effect on society has been notable, and unfortunately not healthy.

It was the discovery of gold in California, and the rush thither to reap a golden harvest without sowing any seed, which stimulated the peopling of the west coast; and it was the Mormon exodus from Illinois, the very same year, and the conversion by these religious fanatics of a tract of country in the very heart of the great desert into an oasis of beauty and fertility, which proved that the mountains would yield other products than the precious metals. Miners and Mormons were, therefore, the elementary material out of which Western life was originally composed.

Gold was the influence that first drew the mobile wave of restless humanity to each section of the mountains in succession, to California in the west, to Colorado in the east, Montana in the north, Arizona in the south. But in searching for gold, silver was discovered, a metal more important to local industry than gold, owing to the greater intricacy of the metallurgical treatment required to win it from its ores. Until 1880, precious-metal mining alone was assisted by the railroad, but in that year Arizona and Montana, being brought within the radius of the world's markets, copper appears as a still more important tribute to the freight-traffic of the West. At present gold, silver, copper, and coal, are its staple mineral products. The output of the last is naturally restricted in quantity by the necessarily limited local demand. The three former have, however, been mined on a scale which the world has not hitherto witnessed, and with that reckless disregard to economy which has characterized all

western enterprises. In a wonderfully short space of time, even when life was insecure, and the Indian was almost the undisputed master of the plains and mountains, an army of prospectors scattered themselves over the whole region, searching in the most inaccessible spots for the precious metals. A region one thousand miles wide by two thousand long, rich in minerals, and utterly virgin ground, was scoured. It is practically bare of soil and unconcealed by forest, and therefore exploration was easy and discovery rapid; but hardly more rapid than the avidity with which the discoveries once made were utilized.

As proof of this, look at the statistics of the precious metals since 1849. Between that date and 1885 the Rocky Mountains yielded about $2,370,000,000 in gold and silver. The Comstock lode alone produced from 1860 to 1880 $306,000,000 in gold and silver.

It is worthy of note that on the construction and equipment of the twenty odd thousand miles of railroad in the Rocky Mountain system there were spent $1,267,000,000, or considerably more than one half the total production of the precious metals.

Despite the relatively small value of copper, its mining and reduction have been pursued with the same wasteful haste. The great enterprises were undertaken when the cost of the metal was much higher than at present. They were planned on a magnificent scale, and when started so frightened the world by their production, that they drove the price down to less than one half. Having been started, they will continue to be run till poverty of ore stops them, as it has stopped the Comstock. I do not mean to say that the wealth of the

West is exhausted, or that great metalliferous deposits will not yet be discovered. But what happened in the early days after the conquest of Mexico is being re-enacted to-day. Within a generation of the conquest nearly all the great mines of Mexico had been discovered, and the cream was rapidly skimmed off them. Yet some of them have been worked almost without interruption, and that profitably, till our day. So, while there is little likelihood that prospecting will be as profitable in the future as it has been in the past, it is as certain that through the beneficial stress of poverty, with which nature sooner or later corrects our extravagance, mining and metallurgy will become more and more of a business and less of a gambling game, to the great gain of both the East and the West.

But the opening of the West has created other fields of industry. The farming land is limited, though everywhere extensive enough to supply the needs of the scanty population ever likely to be dependent on it; but the grazing lands are, comparatively speaking, illimitable. These are being rapidly occupied by cattle only a little less wild than the buffaloes, and by herders as reckless and restless as the miners. There has, therefore, through the influence of their isolated out-door life, passed far from the restraints of society, been rapidly developed a race of herdsmen, prospectors, miners, ranchers, acting under very different impulses from those which kept the New England and Virginia colonists content with their narrow home between the Atlantic and the Alleghanies. These men of the West are the real *coureurs des bois* of our day, and all the acts of Congress would be as powerless to restrain their active independence, as were the *édits et ordonnances* of the

French governors to check the roving habits of their predecessors. Were there a new country to explore, these would be the men to do it. Let there be a great gold discovery in central Africa or New Guinea, and a contingent will start from the Rockies by the earliest train to catch the first steamer, with no baggage but a pair of blankets, and they will reach their goal, be it where it may.

But I must close. After this survey of what has been done in railroad building west of the Missouri since 1862, I think that whether or not you admit the proposition with which I started, that our worthy ancestors were lacking in the spirit of adventure, you will allow that our contemporaries are not deficient in the spirit of enterprise.

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